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September

Studies by Voorhees, Gmelin & Walker for The Petroleum Industry's Exhibit at the New York World's Fair 1939

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PENCIL POINTS

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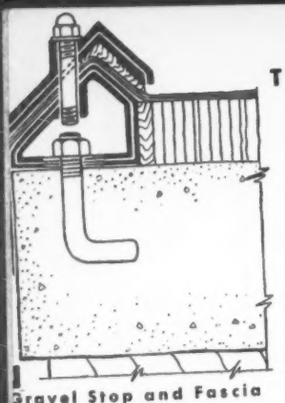
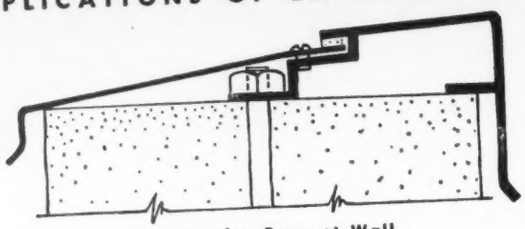
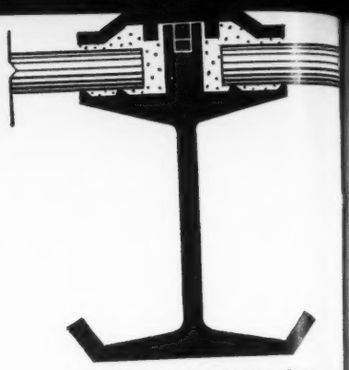
TYPICAL APPLICATIONS OF EXTRUDED SHAPES



Gravel Stop and Fascia



Coping for Parapet Wall



Section of Skylight Bar

Voorhees, Gmelin & Walker

STEPHEN F. VOORHEES
RALPH WALKER
MAX H. FOLEY
PERRY COKE SMITH

The following pages display the growth in the design of an exhibition center for The Petroleum Industry Exhibition Inc. at The New York World's Fair 1939. The changes and development in the drawings and sketches are the results of the deliberations of a Board of Design composed of Voorhees, Gmelin and Walker, Architects, The Public Relations Institute Inc. and Gilbert Rohde, Designer of Exhibits. All the drawings and sketches, except as noted, were made in the office of Voorhees, Gmelin and Walker.

NEW YORK
WORLD'S FAIR
1939

THE PETROLEUM INDUSTRY EXHIBITION INC.

The Petroleum Industry's Exhibit fills an equilateral triangular prism 200 feet on a side and 80 feet high. The ground floor is completely open on all sides except for four cylindrical tank forms that seemingly support the horizontal concavities of the sides above. Night lighting has been made an integral part of the structure so as to keep the brilliant blue color equally effective both night and day. The 195-foot derrick at one side will demonstrate rotary drilling

. . come to the fair .

EVEN THOUGH the stream-lined tips of World's Fair buildings brush the clouds, and even though their sophisticated walls stretch to the horizon, it is not enough if they do not also awaken and satisfy the joyful anticipation that fair-goers of all times have put into the words of the old ballad. The simple lilt of fun that vibrates in these four short sounds is wrapped up with one of the lusty moments of pure joy in man's life. Thirty-niners will not trade and barter, or buy and sell, as did their forebears who first sang the song, but they look forward with no less anticipation to the display of goods, processes, and the spectacle of entertainment. If they fail to come away humming the equivalent of the age-old refrain, the designers and exhibitors may be said to have failed in their prime purpose.

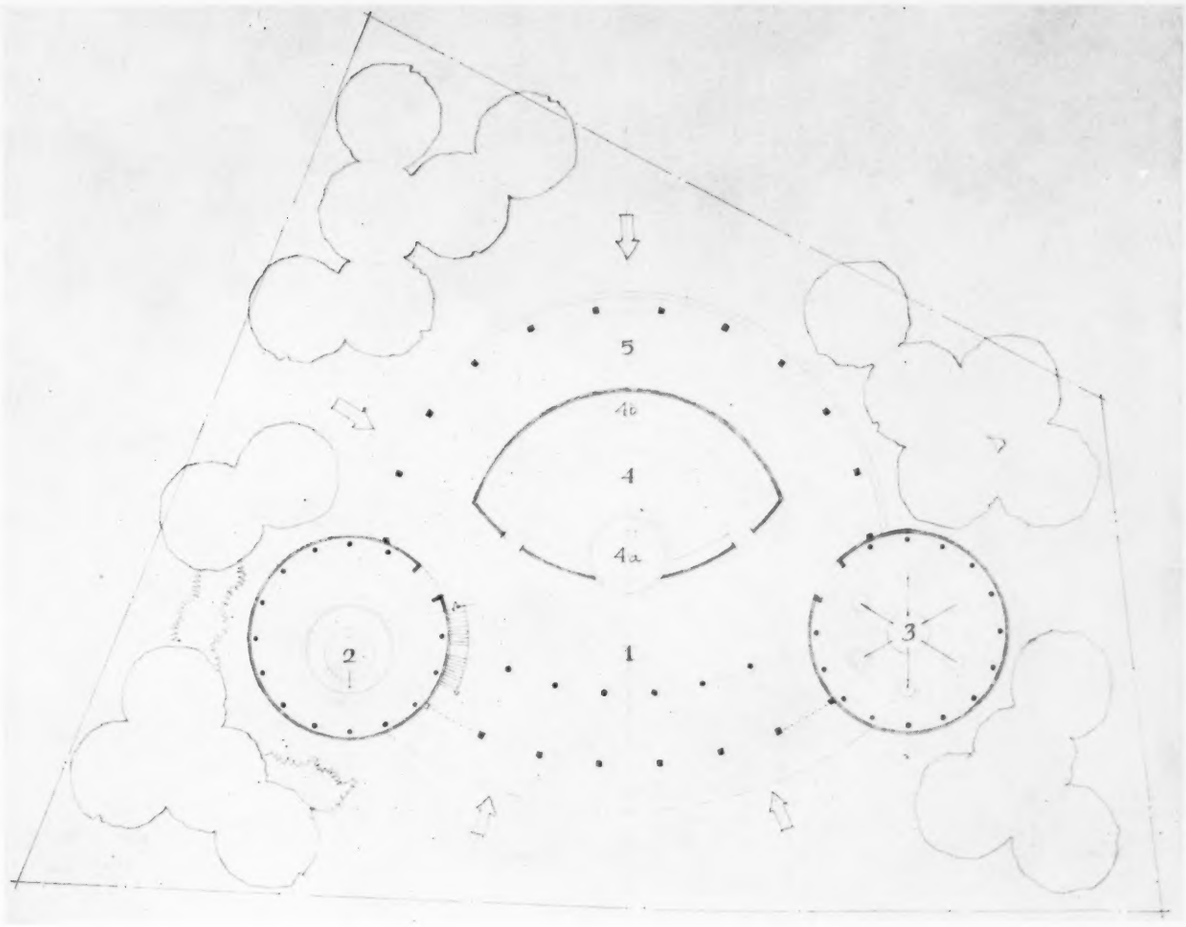
The World's Fair is not the place for Architecture in the strictest sense of the word. The serious things should be over and done. Each building should be keyed to strike the same breath-taking pitch with which the first gay strains of the scherzo movement of a symphony pierce the hushed air. It is the time for novel effects.

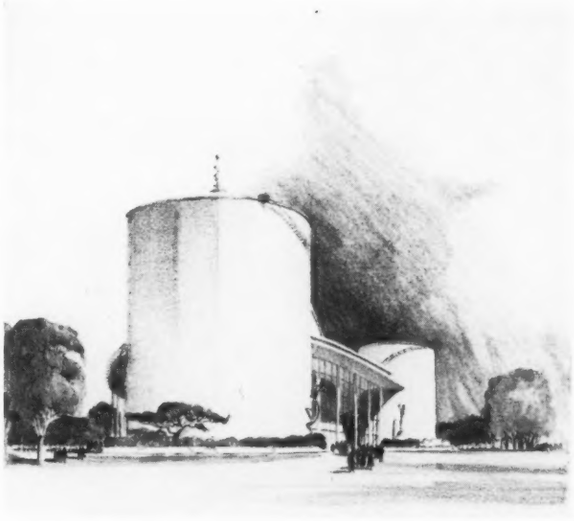
Nowhere is it clearer that an architect's duty goes far beyond supplying his client with a good set of working drawings. Although the general tendency of World's Fair buildings is to approach the form of a shed, they are still far from being a mere shelter for a display; and in the finest instances emerge as the most important part of the machinery of display. Unless the program of the fair itself limits the quality of the structure to a predetermined line, as it did in the Stockholm Exhibition of 1930 which definitely restricted its theme to the benefits of militant functionalism, this is not other than it should be. Architecture can be display; and display can produce good and stimulating architecture.

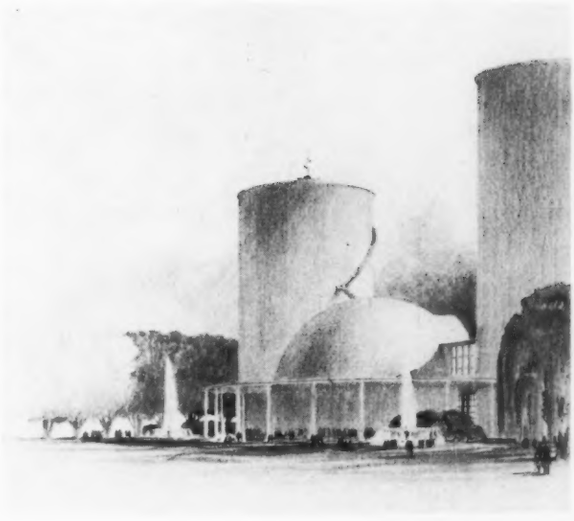
It would be a fruitless task to try to convince an exhibitor that a good building in the architectural sense alone will fulfill his needs at the fair. The spectacular aims that motivate the exhibitor's desire to participate in the fair are the mainspring of the design. More than often it happens that he has not made a choice of what he wants to present or how he wants to do it. Assistance in the selection of these elements and their dramatic presentation become the architect's first duties. Few architects are qualified to solve all these problems themselves. Other designers must be called into collaboration. The unlimited vistas such freedom offers to the powers of an imaginative designer under sympathetic architectural guidance are evident. Once they are determined, the structure to support the spectacular features easily takes its place in the design. Failure to take advantage of these possibilities probably will result in a mere shed, and the man with " . . . . come to the fair," on his lips will know he has been let down.

The series of studies shown on these pages illustrates how these problems have been attacked in the instance of the Petroleum Industry Exhibition, Inc. The building is an open shell that gives a kind of three-dimensional welcome. A man enters its shady bounds or leaves as he chooses, since no doors bar his path. He wanders as he pleases and sees how many ways Petroleum touches his life, by means of still and animated spectacles on the inside of the shell. Dramatic and novel effects are emphasized in the production of all displays, just as the spirit of fun and novelty trickles through the form and structure of the shell. Nothing is forced on the visitor; nothing is urgent. The only hope is that he will be impressed to remember that the Petroleum Exhibit was a pleasant place, as he whistles " . . . . come to the fair," on his way.

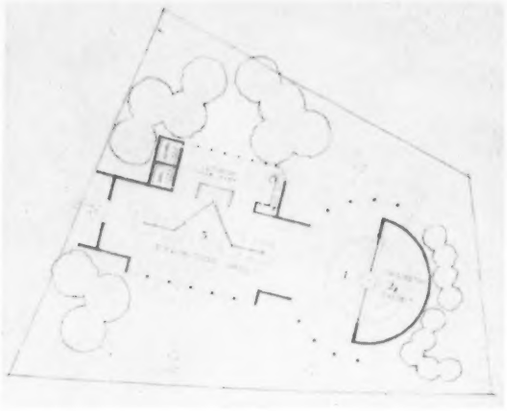
The germ-plasm of the exhibition center for the Petroleum Industry Exhibition Inc. was developed from the three short pages and the rough sketches shown above. These formed the first attack on a display problem whose wide scope and varied details made the choice of emphasis very difficult for all concerned. The clarity of the exposition of the problem and the indications of the solution on the above notes have served as a guide during later developments

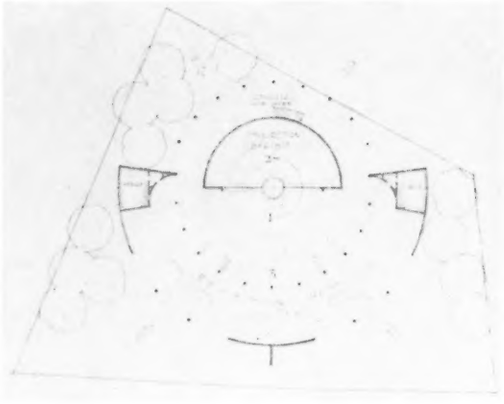


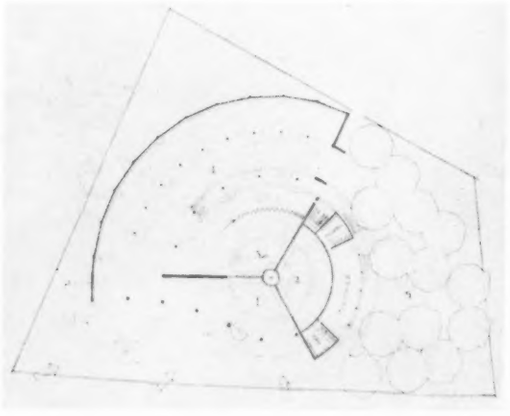




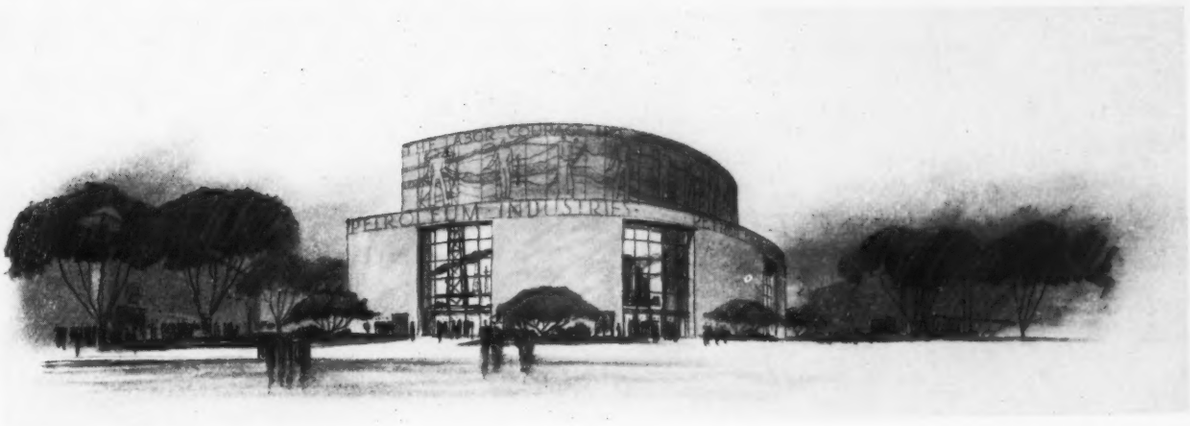
The ideas set forth in the first program proved a feasible solution in many respects. Oil storage tanks and the domed focal exhibit center made a building of potential interest. Its greatest value lay in the other aspects of the problem it drew to attention. As point after point was taken up, and new ideas were injected, the conception began to grow and assume other shapes. Architectural form and detail changed as study revealed the needs of the display involved

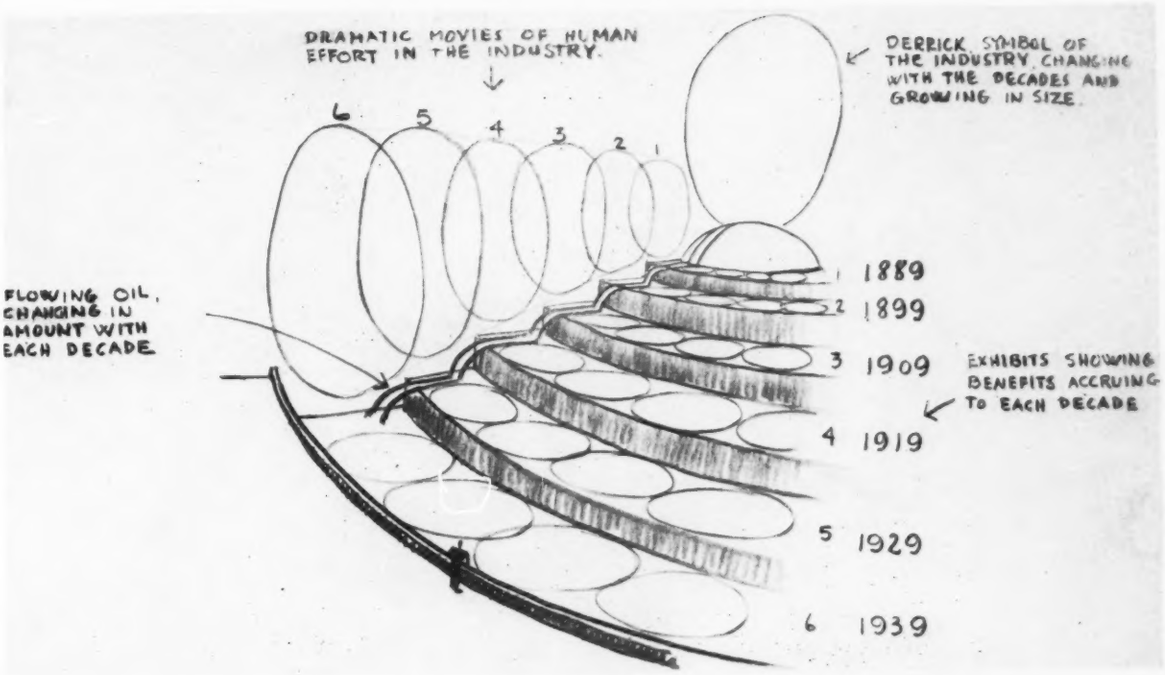




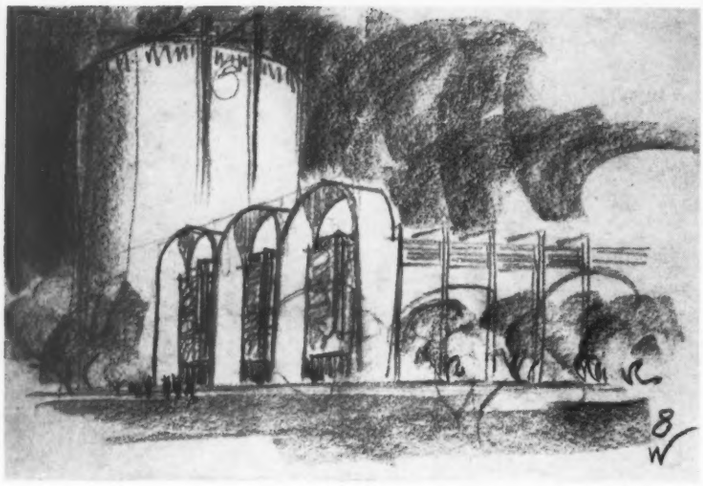


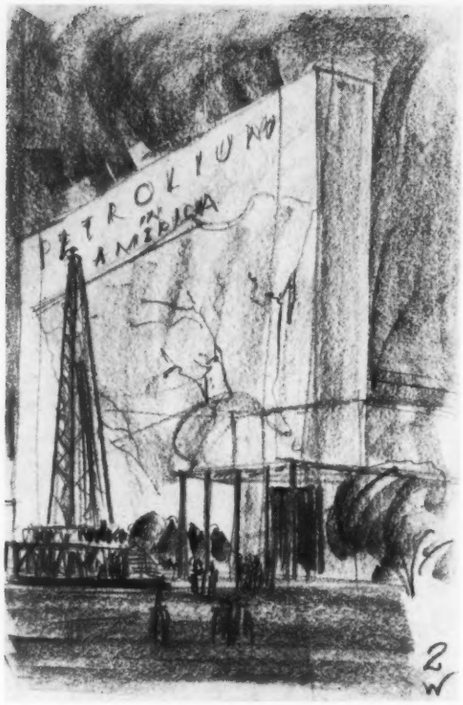
A diligent search for unusual and spectacular forms for the elements outlined in the program led to the variations in arrangement shown above. The size and position of the essentials on the lot was most carefully considered. The tanks were dropped. The technical apparatus, required to make the exhibit effective, expanded the building until it almost filled the lot

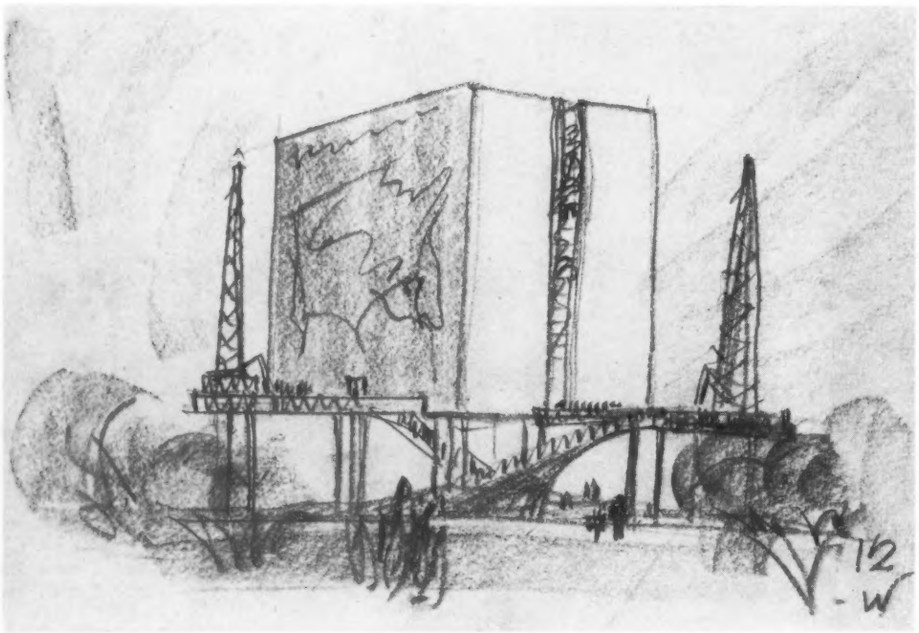



DRAMATIC MOVIES OF HUMAN EFFORT IN THE INDUSTRY.
DERRICK SYMBOL OF THE INDUSTRY CHANGING WITH THE DECADES AND GROWING IN SIZE.
FLOWING OIL, CHANGING IN AMOUNT WITH EACH DECADE.
EXHIBITS SHOWING BENEFITS ACCRUING TO EACH DECADE
6 5 4 3 2 1
1 1889
2 1899
3 1909
4 1919
5 1929
6 1939

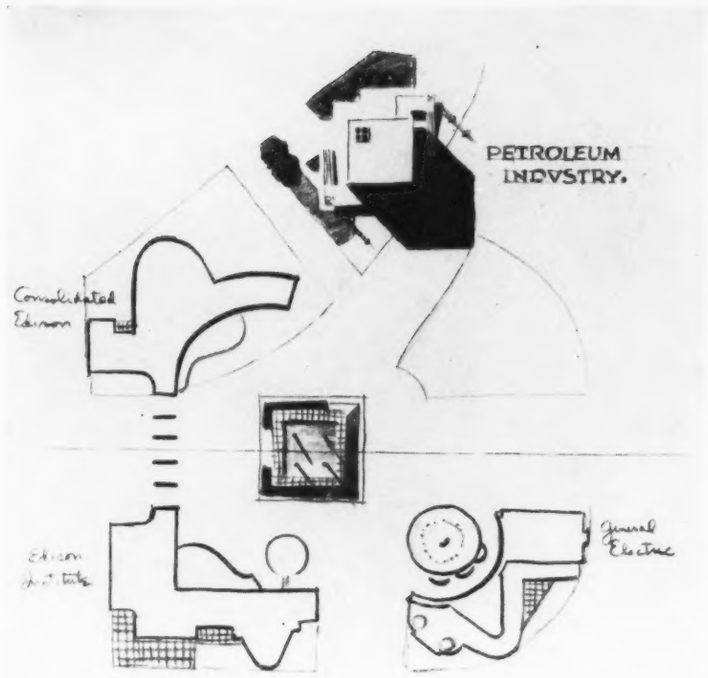
A shadow show of the development of the use of oil made a striking departure for one focal scheme. Building structure had been very much subordinated to the display material. From this point on, the effects to be achieved and the manner of the presentation continually added energetic features to structural design. The building merged more and more with the display

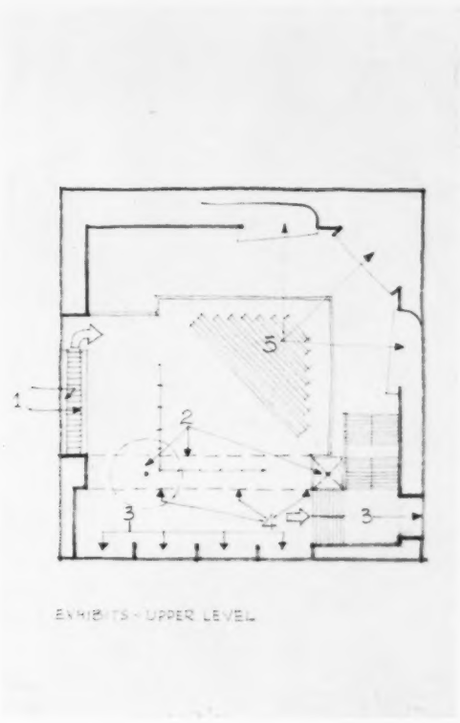


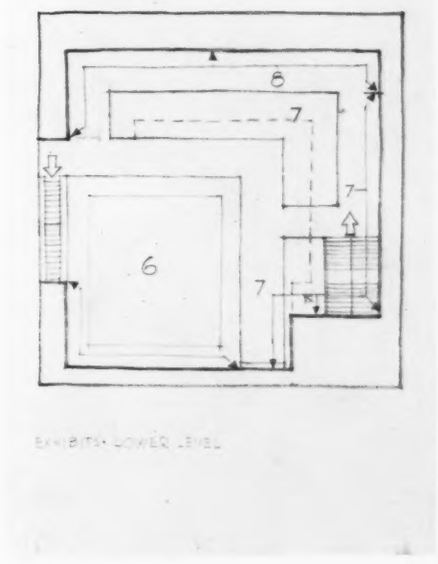




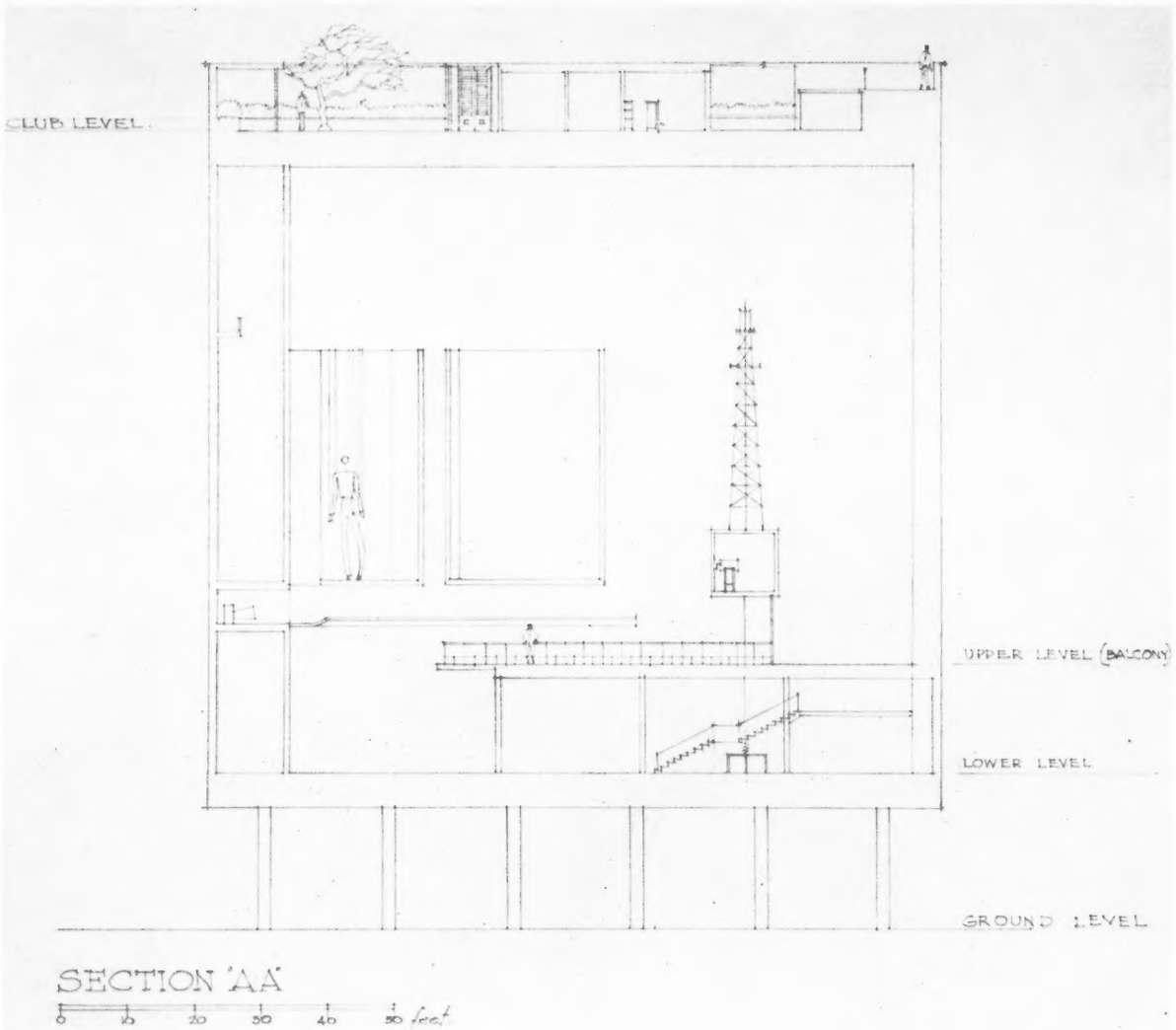
Large storage tanks and refining machinery disappeared after the sketch in the upper left corner. The billboard and derrick in the upper right are easily seen to be closely related to the cube-on-stilts sketch below. The novelty of a 100-foot cube, 20 feet above the ground, flanked by derricks, made an arresting thought as a picture for a Fair building both from a structural and display standpoint. It was filled with many imaginative and practical possibilities



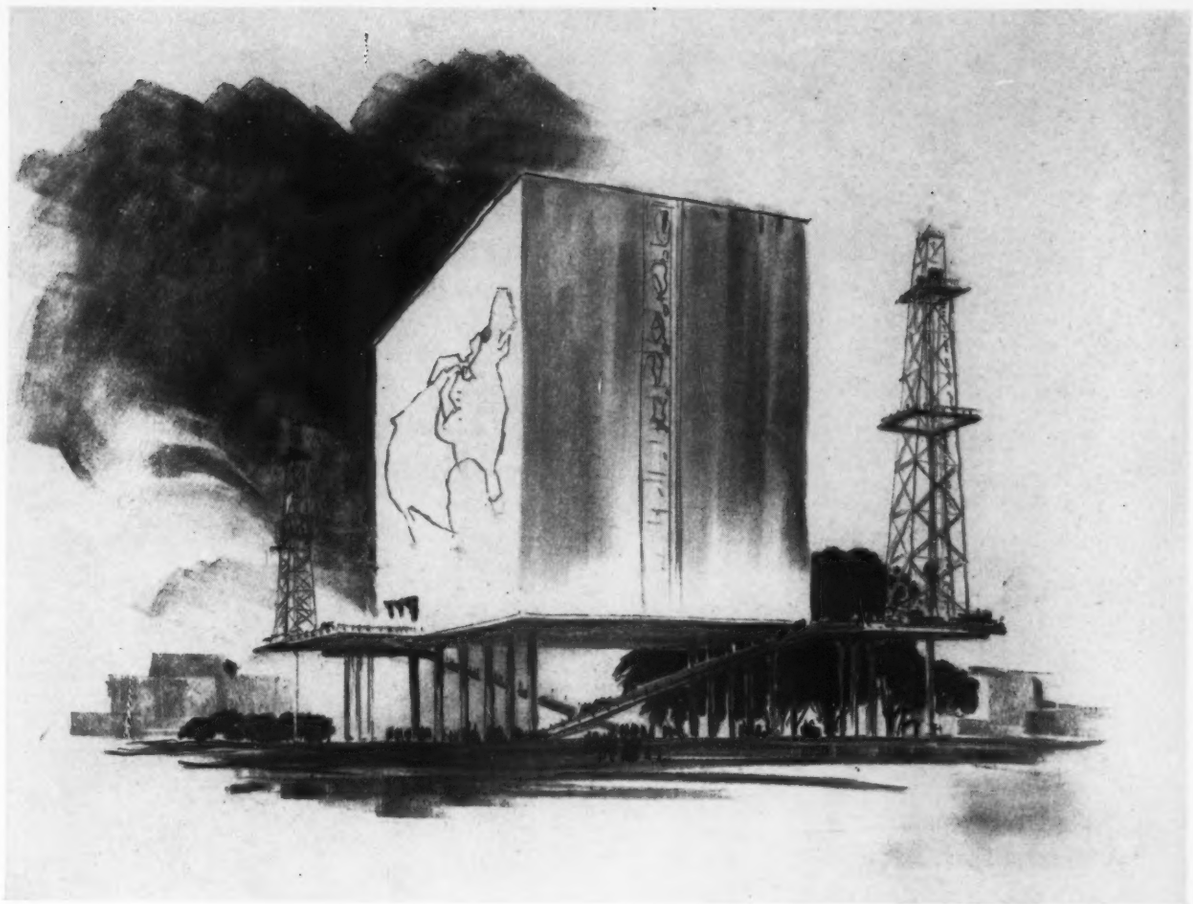


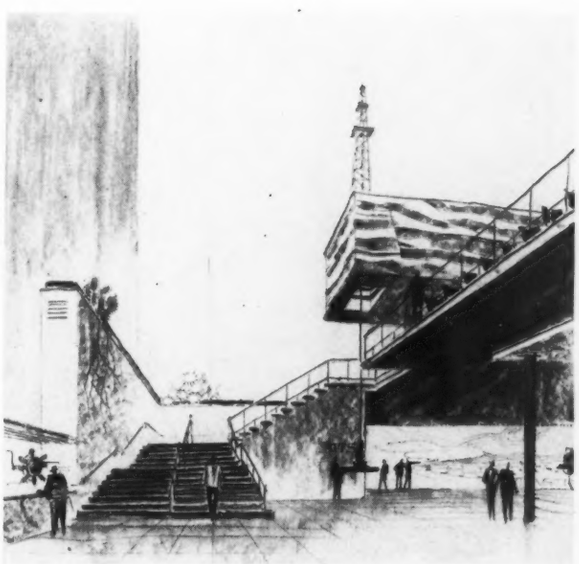


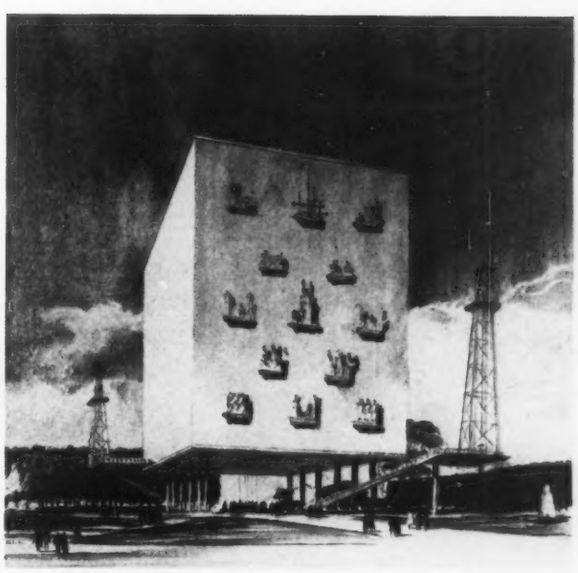
Not only the situation on the lot and the position among the neighboring buildings, but the framework it offered for striking displays on exterior and interior, made the cube-on-stilts scheme the first one that completely unified all the architectural and display elements which composed the problem. By gradually breaking the spectators' contacts with the usual as he ascended into the cube, the dramatic impression was to be subtly but effectively increased



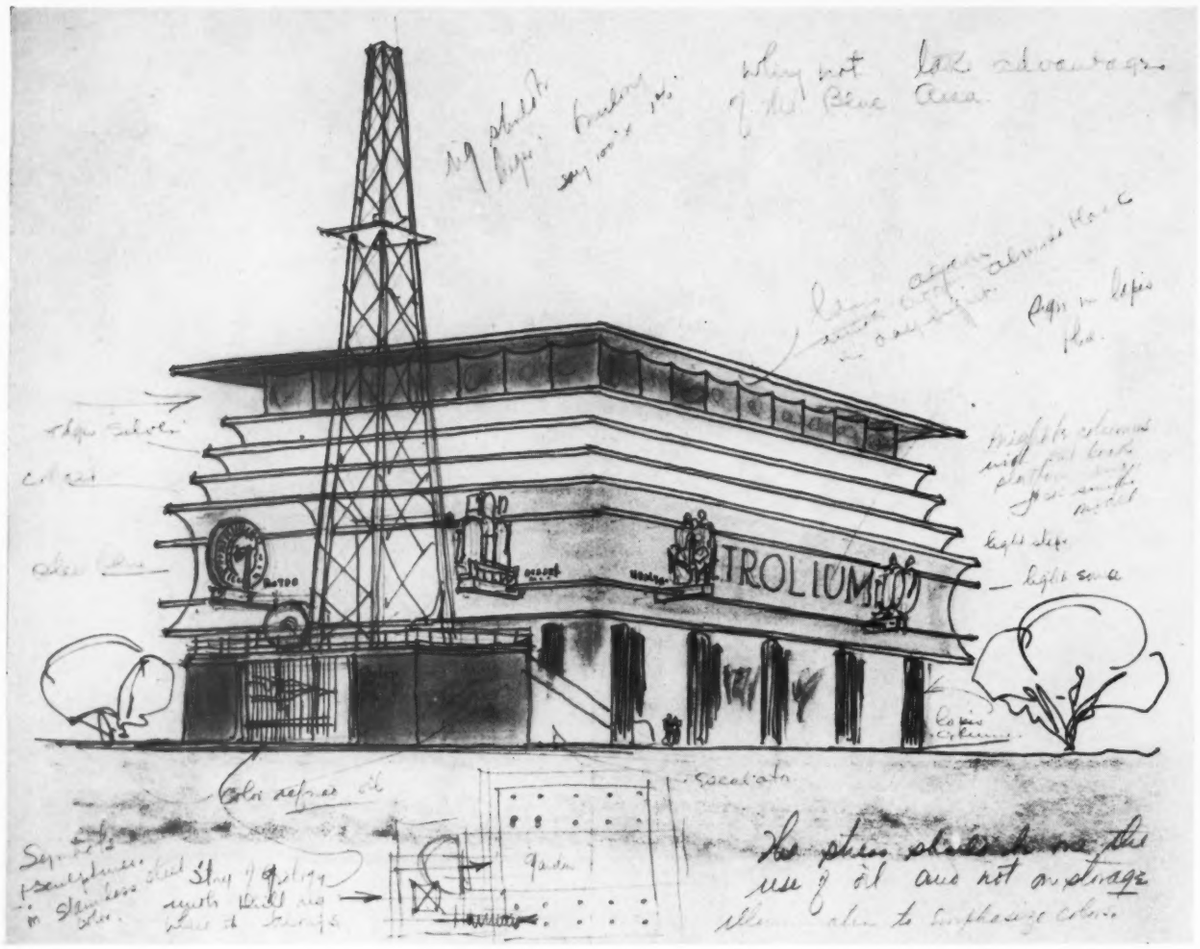
The interior walls of the cube offered unlimited opportunities for short spectacular displays of all kinds with the freedom of dramatic effect that modern stage and lighting technique ensures. Marionettes, human actors, movies and other kinds of projection demonstrations were to be utilized in helping to display how oil has affected the course and trends of our civilization

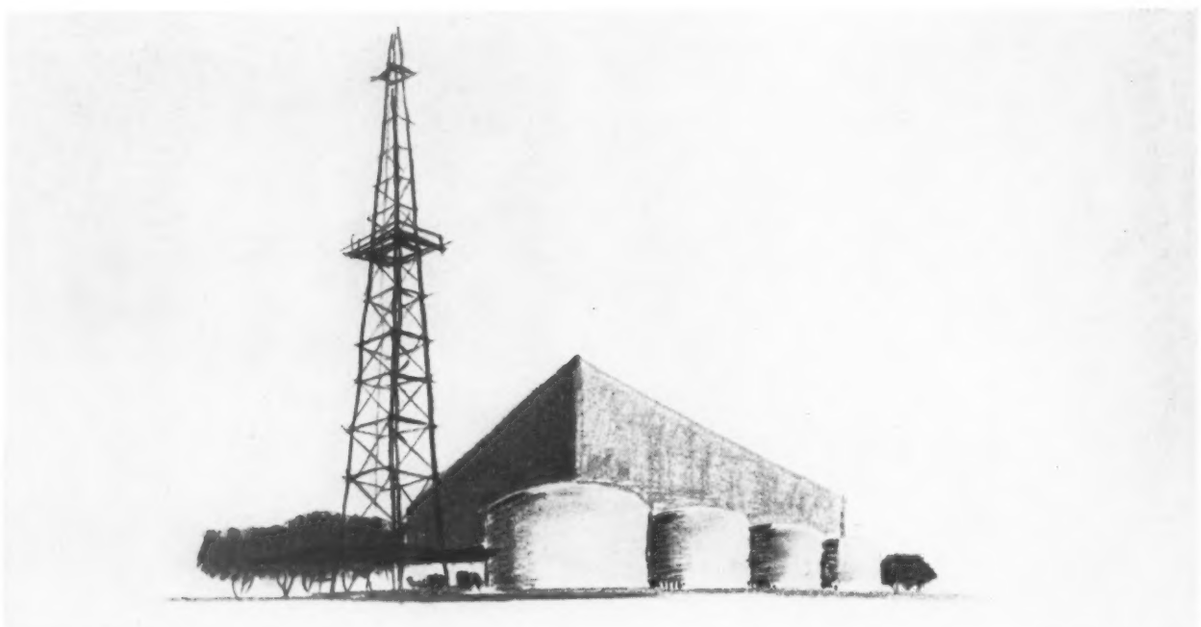




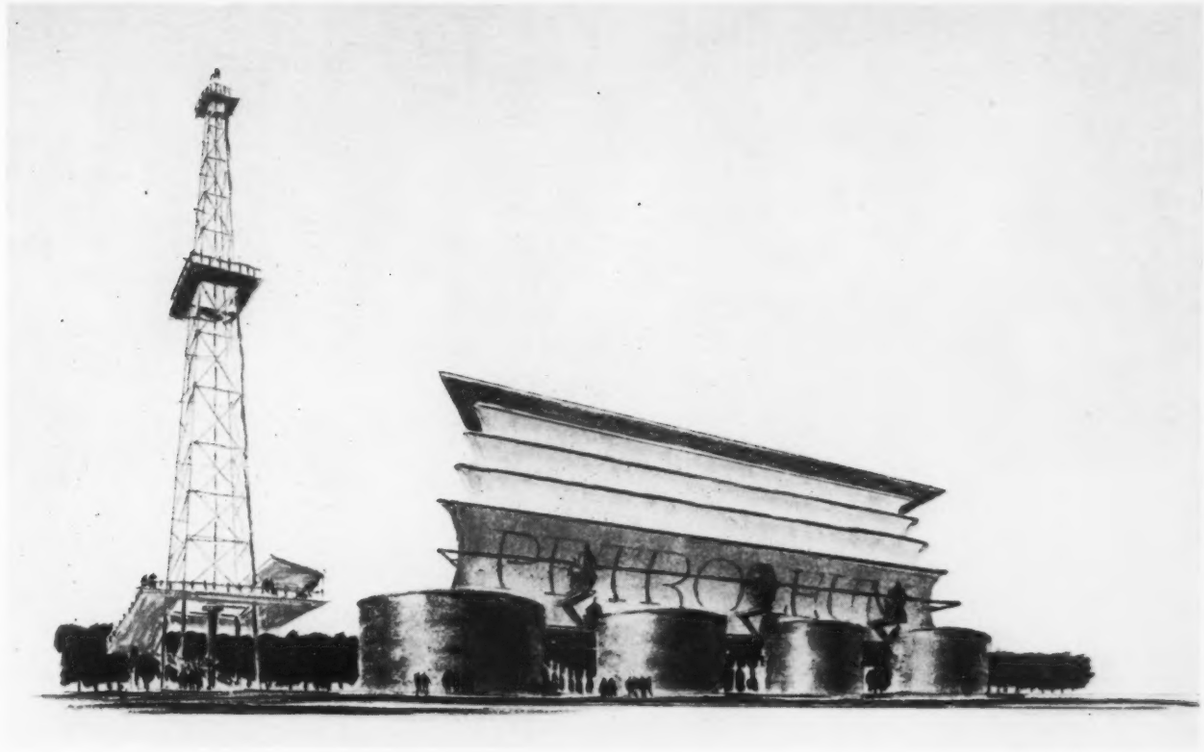


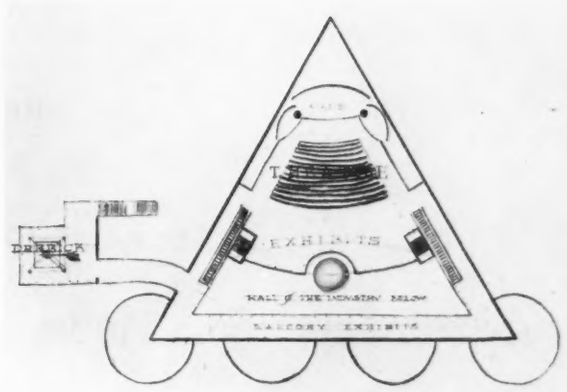
Escalators were part of the scheme to carry the crowds to an outside level on which derricks were raised as symbols of the Petroleum Industry. The spacious stairs and platforms inside the cube offered a constantly changing panorama of scenic and technical effects. The World's Fair Design Board considered the cube too large, its surfaces overpowering and rejected it

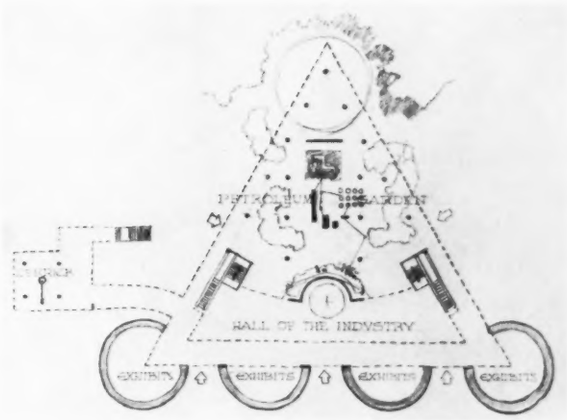




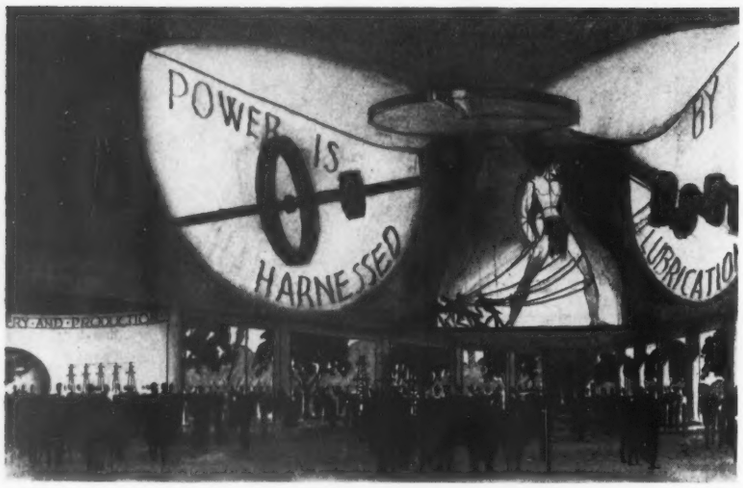
In an attempt to meet the criticism of the World's Fair Design Board, two sketches were made that resulted in the final solution. The first, above, showed a wall treatment incorporating color and lighting as part of the cube's surface structure. The second, below, reduced the cube to an equilateral triangular prism supported on sma'l replicas of tanks. The derrick was retained

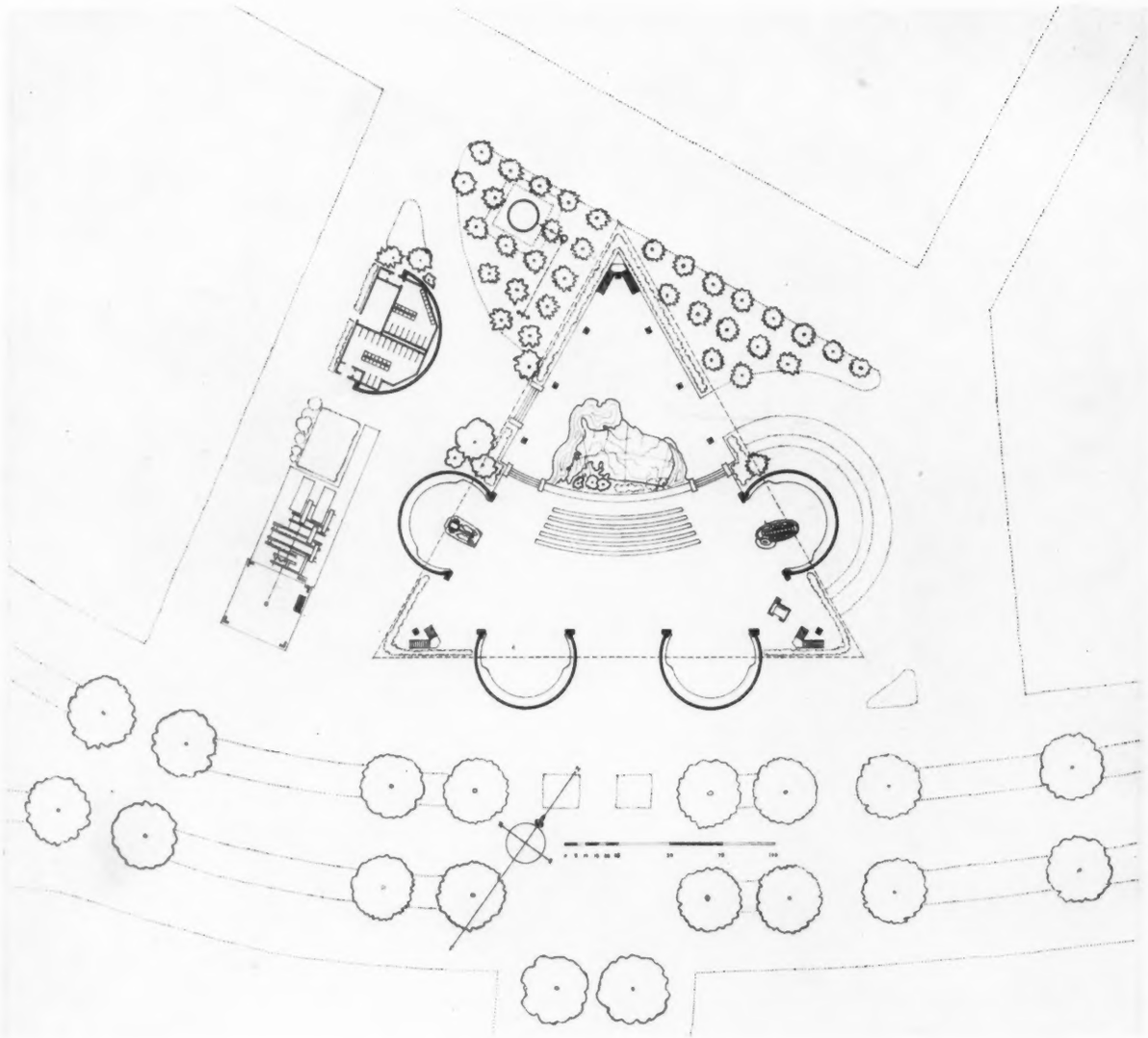




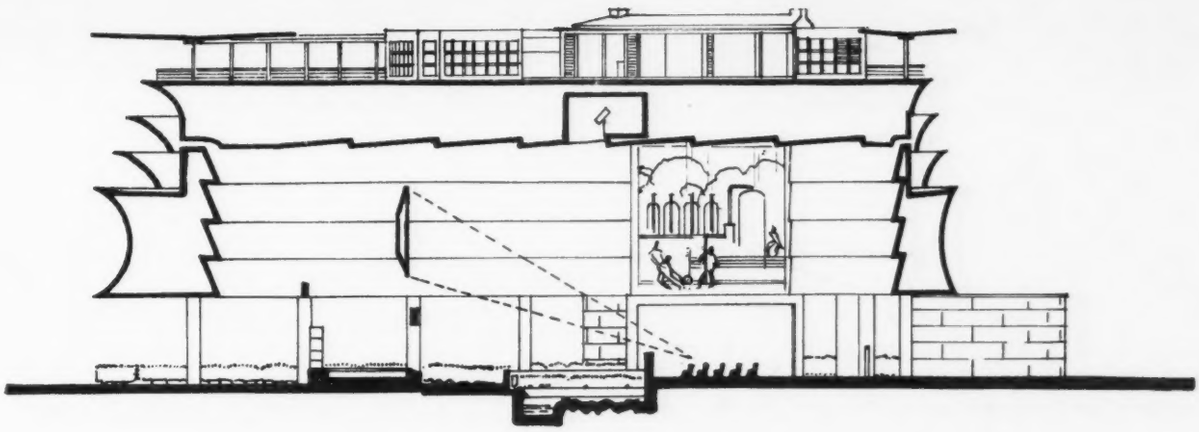


Combining the features of the two previous sketches, the triangular form, the concave wall treatment, the tanks and the derrick, gave the essentials of the building to be built at the Fair. Removal of all kinds of public vertical circulation, mechanical or otherwise, finally made the ground floor the floor of the main hall, inviting the visitor to enter. No barriers were permitted



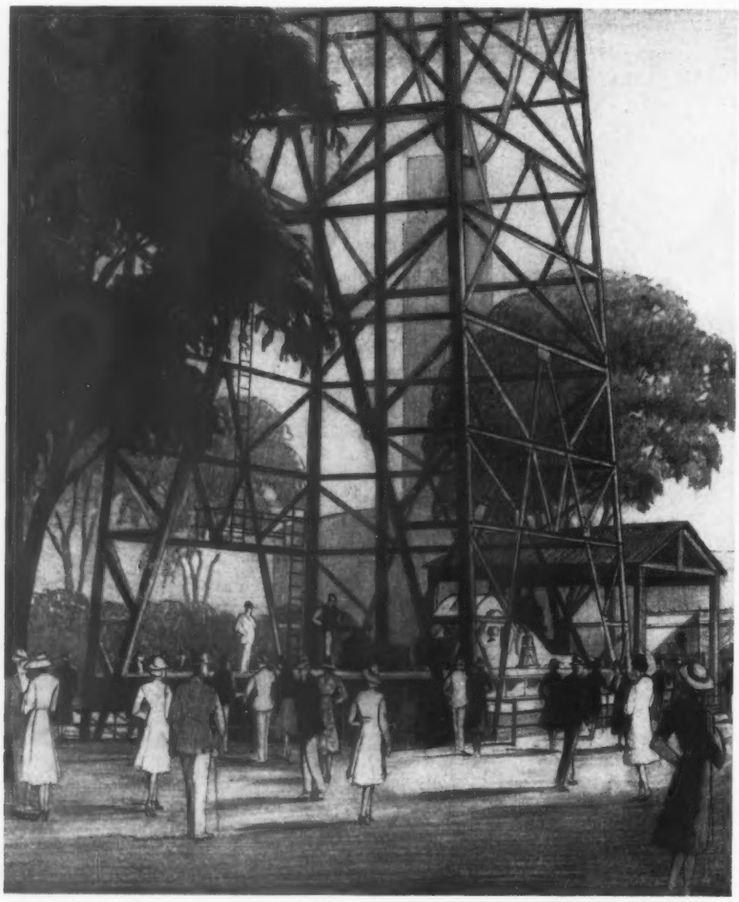


An enticing shade and easy access into it from all sides are novel points in the design. A principal area of the main floor is devoted to an animated relief map of the United States, showing the activities of the Petroleum Industry in miniature. Oil fields, refineries, pipe lines, tankers, and trains will dot and move across its surface. The interiors of the tanks will house other detailed technical displays depicting every-day relations of the industry with the average man



The feature of the great hall, whose ceiling is 60 feet above the ground, is a central screen. Theatre seats are provided for those wishing to witness the performances of marionettes and movies, at stated intervals. Standers and wanderers are at liberty to come and go without bothering the other spectators. At no time is a visitor forced to walk down a restricted path where he is hedged in by unbroken walls or displays as in the conventional exhibition building

Two drawings by Chester B. Price of the building being erected on the grounds of the New York World's Fair



VOORHEES

GMELIN

WALKER

ARCHITECTS

THE PETROLEUM INDUSTRY EXHIBITION INC.

COMPETITIONS

BY TALBOT F. HAMLIN

A NEW sentiment in favor of open architectural competitions has during the last two years been growing rapidly. It has at last achieved important results, in both public and private work. Wheaton College started the ball rolling; it was followed shortly by the federal government, with a surprising reversal of its former attitude. The Treasury Department announced two competitions—one a façade composition for typical small post offices, the other for a post office and federal building at Covington, Ky. The results of the Wheaton College competition (conducted jointly by The Architectural Forum and the Museum of Modern Art) and the first of the government contests have already been announced. At the present time, Goucher College also has a competition under way—not, to be sure, entirely open, yet in its extended list of approved competitors quite different from the old "invited" type of competition. Thus, I hope, a beginning has been made, and the results already show that the architects of America are competition-starved. Some 250 sets of drawings were received for the Wheaton College competition, and over 1,000 for the first of the government contests.

This flood of drawings is, of course, in a way absurd. Excellent arguments can be made against a system which produces such an enormous amount of work that is, seen superficially, waste; and yet the reason for this large number of contestants is to be sought, not in the system itself, but in the current building depression, on the one hand, and the lack of more competitions, on the other. If open competitions were relatively as common in this country as they are in several countries abroad, the list of competitors for each would be vastly diminished. Many of the younger firms, for the first time, found in these competitions an opportunity to show their mettle; is it strange that they took advantage of it? It is possible also that, if the system is carried on—as I hope it will be—some method of regional selection of competitors, except for the largest and most important work, may eventually be found advisable, not only to decrease the number of drawings which must be judged, but also for the sake of the local development of the architectural profession itself. This was much in the minds of the members of the National Competitions Committee, in their campaign for federal competitions; their general idea was that in the case of all smaller federal buildings the competitions should be limited to architects practicing in the state or region where the building was to be situated, and only in the larger works was the competition to be nationwide. All of these questions will have to be settled by experiment; the results of these two open competitions prove, at any rate, that many architects are eager for them. They show, too, that one result of an open competition system is the fact that new names and new talents have come to the fore, and that in almost all the premiated drawings there is a definite attempt at architectural invention and progress.

I think it may be accepted that, for this reason alone, these two competitions have been worth while, and that they have succeeded in letting new light into the conventional architectural picture, more than anything that has happened in the architectural world in America for a long time.

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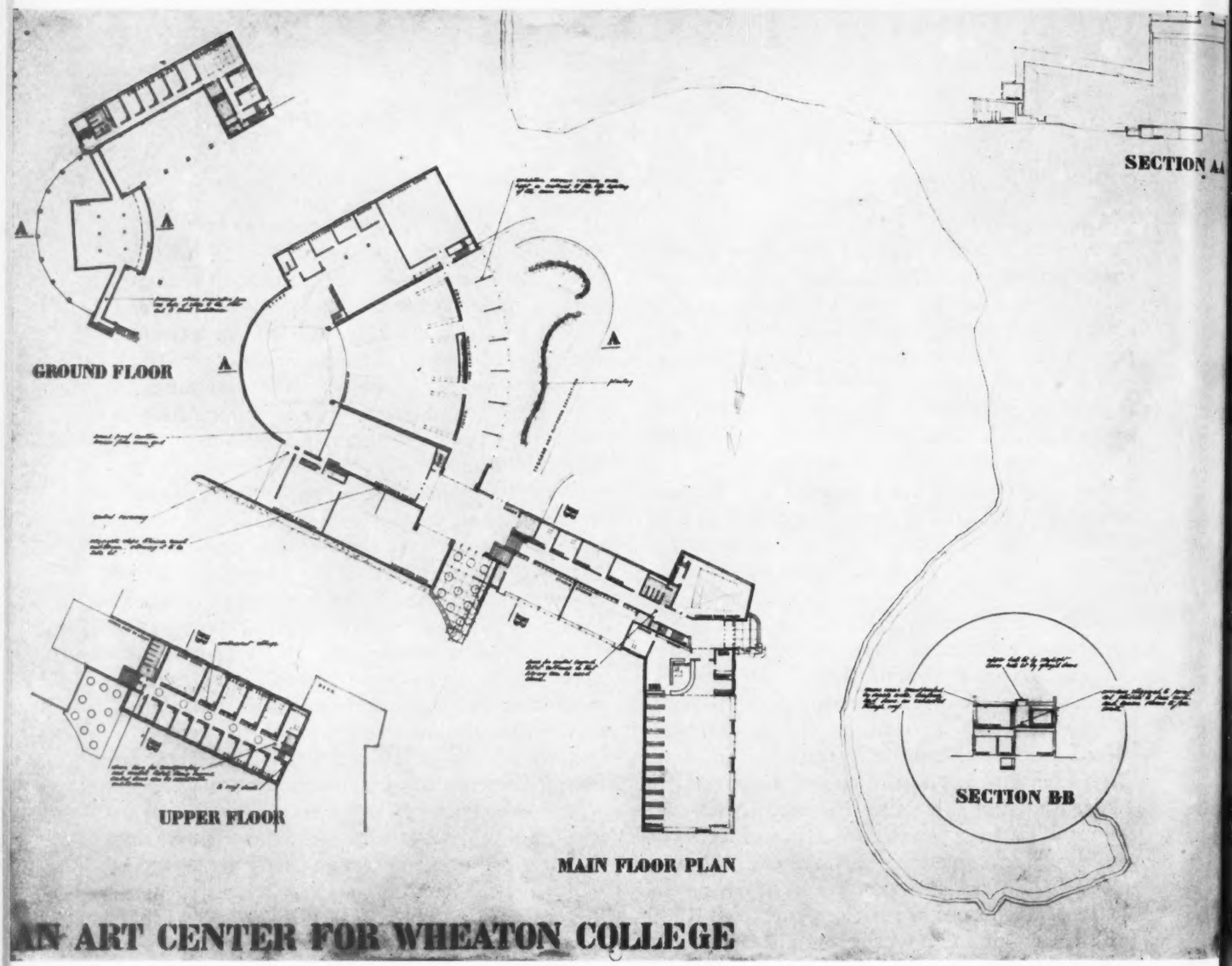
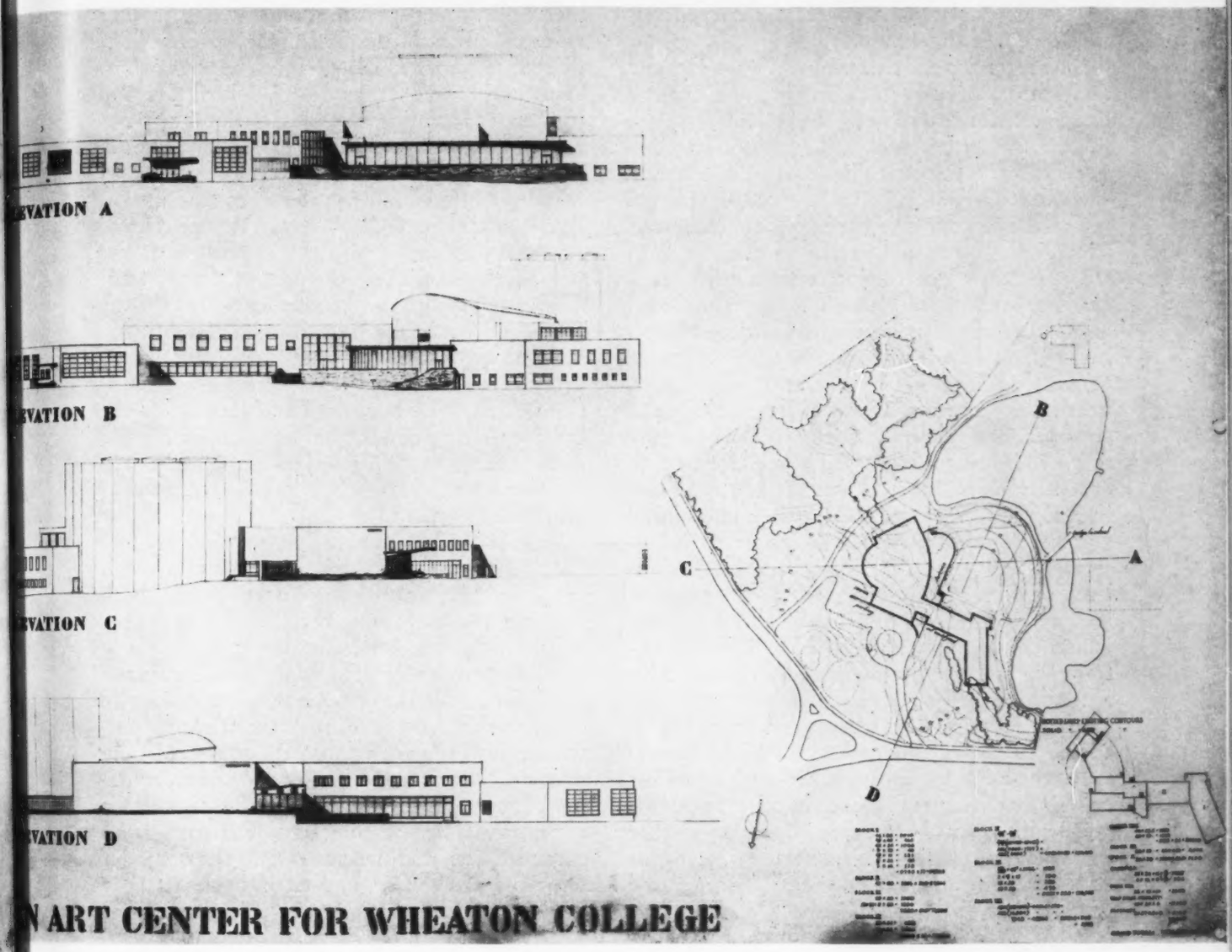
The Wheaton College competition had a peculiar program and a difficult site. A building of small cubage, to hold many functions, was asked for, and special mention was made of the fact that it must be both contemporary in feeling and also in the closest harmony with its location. A study of the drawings exhibited revealed at once the variety of approaches which were possible. The jury report makes it quite clear that they felt they were not selecting a design to be built, but designers to work out an eventual solution, which might or might not have anything to do with the solution shown in the drawings. One can approach any complex problem from either the general or the particular point of view; that is, whether as a whole a design is organized successfully, or whether its details are carefully worked out and then, as it were, added together. There are successful designers who work from the one point of view and others who work from the opposite, but it is only the genius who works from both points of view



at the same time. Juries are probably similar to designers in this respect. A jury working from one point of view might bring in an entirely different verdict from an equally good jury working from another point of view. This is particularly true in the case of the Wheaton College competition, where the elements of site and of problem were so complex.

This jury, according to its own report, made its choice on the basis of five elements: (1) use of site; (2) suitability of the building in size and character; (3) relations of the principal parts; (4) ease of circulation and control; and (5) provision for the needs of each department. There is one other important architectural quality, which the jury might well have considered, that is not mentioned in this list—the power of composition; that is, the ability to take a complex problem, analyze it into its simple forms, and integrate the result into a clear, logical, and beautiful unit. Working on the basis which it chose, it is difficult to see how any other result could have been arrived at than the solution chosen—for undoubtedly it does make beautiful use of the site; it is one of the few problems exhibited which, in size at least, seems within the bounds of possibility for the problem; and its parts have a simple and easy relationship, with ample and direct circulation. As in many of the other drawings, there is difficulty in the connection of the drama school with the rest of the building; the stage arrangement has been severely criticized, because, although both auditoria make use of the same stage house, it would apparently be necessary to strike any scene used for either auditorium when the other was being used. The exterior of this first prize design is manifestly, as the jury states, "unorganized." The large mass of the auditorium overwhelms the lower blocks at the side, and the whole sits but awkwardly



The design placed first in the recent Wheaton College Art Center Competition. Richard M. Bennett and Caleb Hornbostel were the successful designers. Their plan sheet appears on the opposite page. All drawings were photographed by courtesy of Museum of Modern Art

on the contours, with an erratic curved terrace to cover the difficulty.

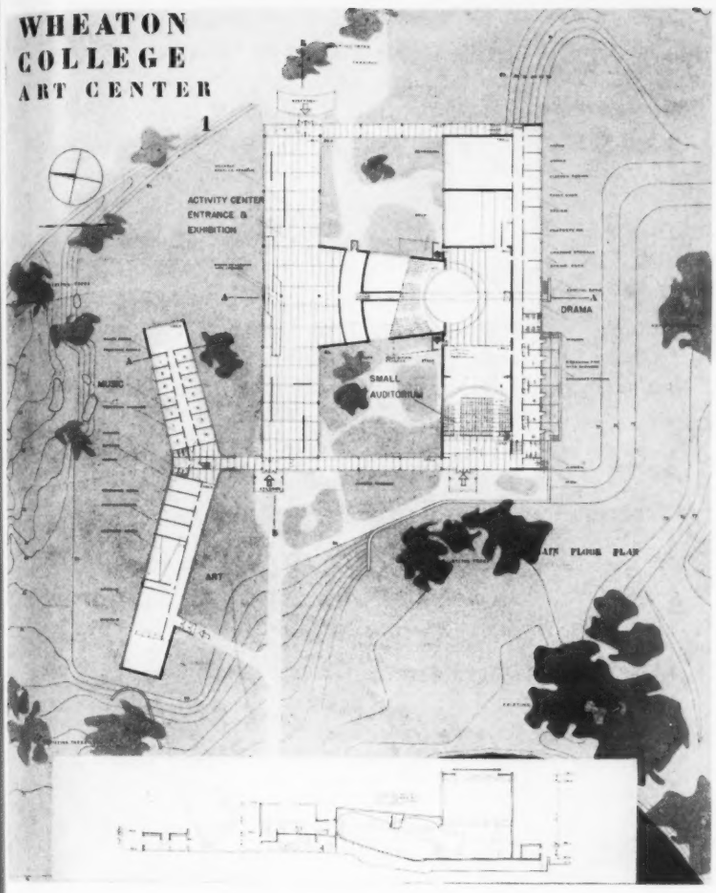
The second prize design, by Walter Gropius and Marcel Breuer, is, as one might expect, a characteristic piece of International Style bravura. Whether such a design is suitable in size and in character to its location is a serious question. Certainly, on the face of it, the smooth rectangular surfaces of concrete, stone veneer, and glass seem to have little of the spirit that one associates with the Massachusetts landscape. The whole has many brilliantly conceived and beautifully detailed elements, and is planned with a severe imposed formality which has necessitated many sacrifices in the relation of parts. Thus, the glass-enclosed art gallery, with its ramps and screens, is magnificent, however difficult to heat in a New England winter; but the placing of the library on the upper floor, within this block, not only makes access to it extremely difficult and creates unsolved problems of library administration and delivery, but also somehow destroys the very unity which this block was designed to have. In exterior design, the beautiful sketch perspective and the elevations cannot hide the fact that all the clear formality of the plan seems to disappear in the exterior treatment. Fundamentally, the main view of the building from the college is a view of the ends of three completely different wings, seen edgewise, so that the whole from this point of view seems, at least to this reviewer, one of disintegrated parts rather than one of simple clarity. It is possible, I am sure, to design buildings as contemporary in spirit, as logical, as brilliant in their use of new materials, which shall have at the same time some deeper harmony with the spirit of New England scenery and some closer relation to New England college life.

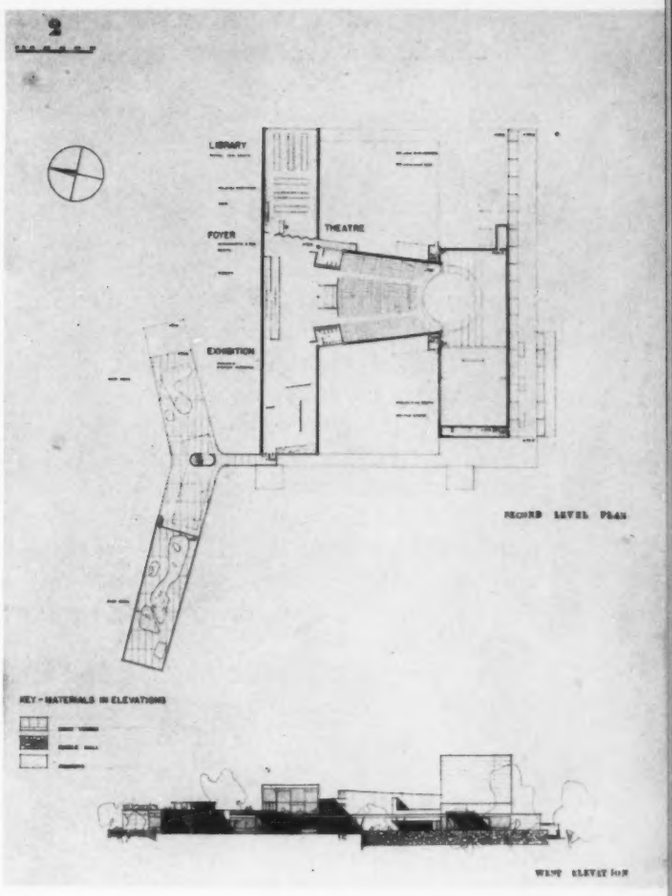
The third prize design, like the first, is one of those in which there is the most compact interrelation of parts and in which the total size seems within the bounds of practicality. Its circulation is simple; but its general T-shape, with the end of the T projecting towards the present group, somehow seems to give the impression that its back is being turned. Moreover, the building and its great curved terrace crowd the lake shore unpleasantly and thereby destroy one of the loveliest qualities of the site. Its handling of car parking, deliveries to the stage, and public as well as student entrances is simple, and effective.

Of the other designs, Percival Goodman's is one of the most brilliant attempts to domesticate in America forms originally European. Some of it is obviously based on LeCorbusier, and some of its details bear a great resemblance to the famous theater at Rostov-on-Don. The design, in general, has excellent interrelationships and organizes its drama school, art and music departments closely. Its library is excellent, and the entrance to the auditorium well handled. As an integrated whole, however, this suffers, like so much work of the International School, from an undue stressing of separate portions. Especially disturbing is the saw-tooth roof over the art studios. Manifestly, saw-tooth roofs give excellent studio light, and probably there is some aesthetically satisfactory solution of their treatment; however, as they are used here—sudden interruptions of the long horizontals of the rest of the building—they cannot but seem obtrusive and discordant notes. This design is one of beautiful parts, but of a whole which adds up to less than their sum.

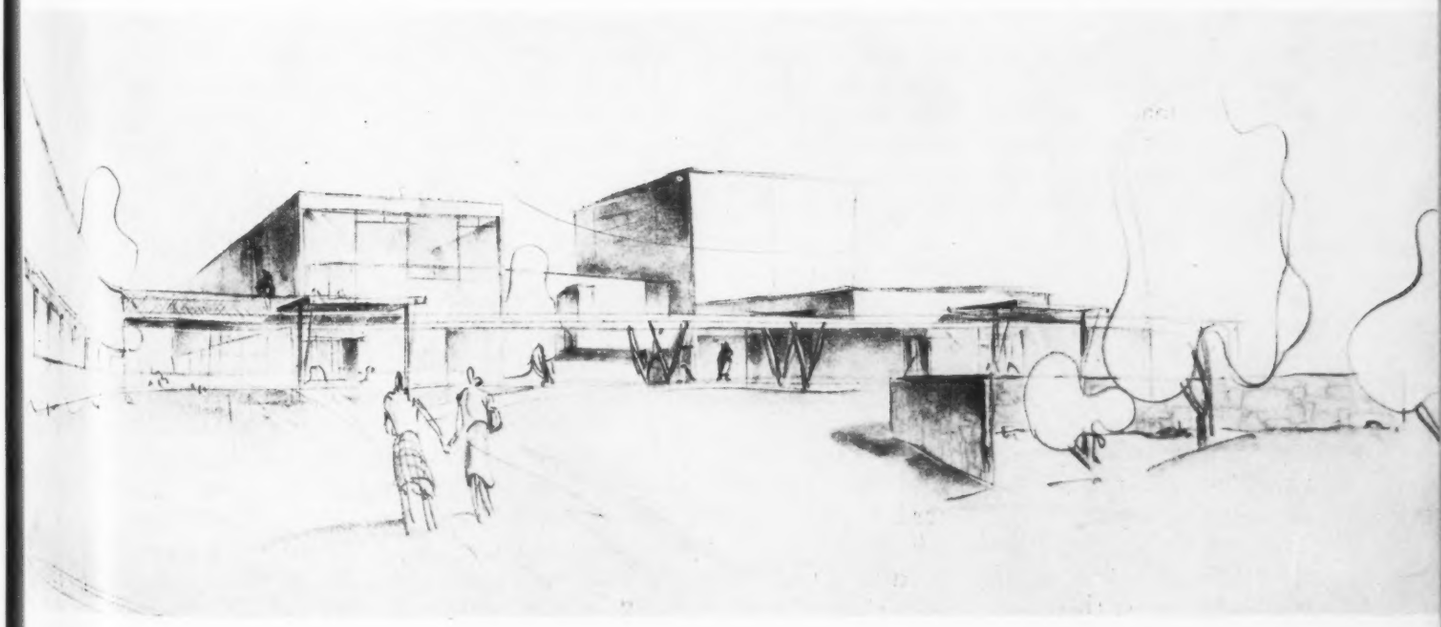
In the fifth prize design of the younger Saarinen, one is in a different world. Here it is the integration of all the parts in one, both in plan and elevation, which has controlled. It has that spontaneity and direct detail which come only with careful analysis and meticulous study. The long foyer leading from the ample public entrance, past the students' entrance, into the art gallery, the simple placing of the auditoria side by side, and the clear demarcation and organization of the various departments are all masterly. The parti is an extended one, and, in contrast to the compact solutions of the first and third prizes, it may have seemed extravagant; yet its basic simplicity of alignment is beautiful and direct. Only the wide separation of the music department from the library is questionable. The same clear, quiet simplicity, without tricks, is seen in the exterior, which is, to my mind at least, the most disarmingly simple and beautiful of any which were exhibited. This, surely, is a "modern" work; yet here, in its unforced loveliness of proportion, its direct use of materials, and its simple detail, there is something of the same spirit which made our New England houses of the late 18th and early 19th centuries the beautiful things they are. If the power to analyze a complex problem and integrate it into a whole, so crystal-clear in its arrangement and so exquisite in its exterior, is a commendable quality, then it might well appear that this design might perhaps have received a higher award than it was given.

Something of the same quality can be felt in the fifth prize design of Lyndon and Smith. Here, too, a simple clarity reigns, and direct corridors connect the various elements closely. The entrance to the little auditorium is per-





The design placed second was that of Walter Gropius and Marcel Breuer formerly of the Dessau Bauhaus and now of Harvard's Department of Architecture in Cambridge



haps confused in its relation to the rest of the building and not as direct as it might have been; but the west elevation, towards the existing college, is delightful, with its art studios built out over the entrance colonnade.

Of the other designs exhibited, those of Neutra and of Brauer, Lindsay and Rogers deserve special comment. The Neutra design places the whole group far to the south of the lot, thus creating the widest possible space between itself and the lake and existing buildings. It forms an attractive building with an ingratiating exterior, of simple masses and a lovely curved colonnade surrounding a protected court. Its arrangement of the stage house in such a way as to allow an outdoor theater is also brilliant, but the problem of the public approach to the main theater is solved only at the sacrifice of large areas of green and the concentration of great amounts of unnecessary driveway.

The design of Brauer, Lindsay and Rogers is entirely different. All on one floor, it spreads over a larger area of the lot than seems desirable. The public and student entrances to the various parts are somewhat confused, and there is little of that crystal-like clarity to be found in the Saarinen and the Lyndon and Smith schemes; yet the whole is so full of delightful, imaginative touches that one is tempted to overlook these questionable matters. Undoubtedly it would be one of the loveliest buildings to walk around and through, of any of those exhibited. Its attractive protected courts, its art gallery screens, its library wing, glazed on two sides, facing out on a protected pool and terrace—all these have imaginative beauty all too rare in American architecture. The exterior treatment has something of this same quality of imaginative charm. The contrasts of simple brick wall and glass areas are especially well handled. The whole has a feeling of intimate and humane loveliness which few of the other exhibited designs achieve.

It is interesting to study, in these Wheaton College drawings, the qualities which contemporary American architecture may be developing. There is strong European influence here and there, in almost all the designs exhibited. The second prize drawing is understandably of the Bauhaus type; Goodman's shows elements from LeCorbusier and from Russia; the Brauer, Lindsay and Rogers design owes many of the tricks which create its charm to Mies van der Rohe; and the Saarinen drawings are perhaps influenced by Dudok. The interesting thing is that, in all of these, these foreign influences have been modified in varying degrees; there is in them—especially in the designs of Brauer, Lindsay and Rogers, of Neutra, and of Saarinen—a search for proportion, for quietness, for restraint, that is not unlike the modifications which the European classic revival forms underwent in America a hundred years ago. Out of these modifications our American architecture of today is growing. We can never avoid influences from Europe, except at the cost of a romantic and artificial ignorance; yet that modern architecture is most our own, and therefore most "true," which is most sensitive to our own traditions of delicate simplicity, of quiet and unobtrusive restraint, of proportions almost classic—traditions which it seems to me have always been at the basis of all that was best in American architecture, past and present.

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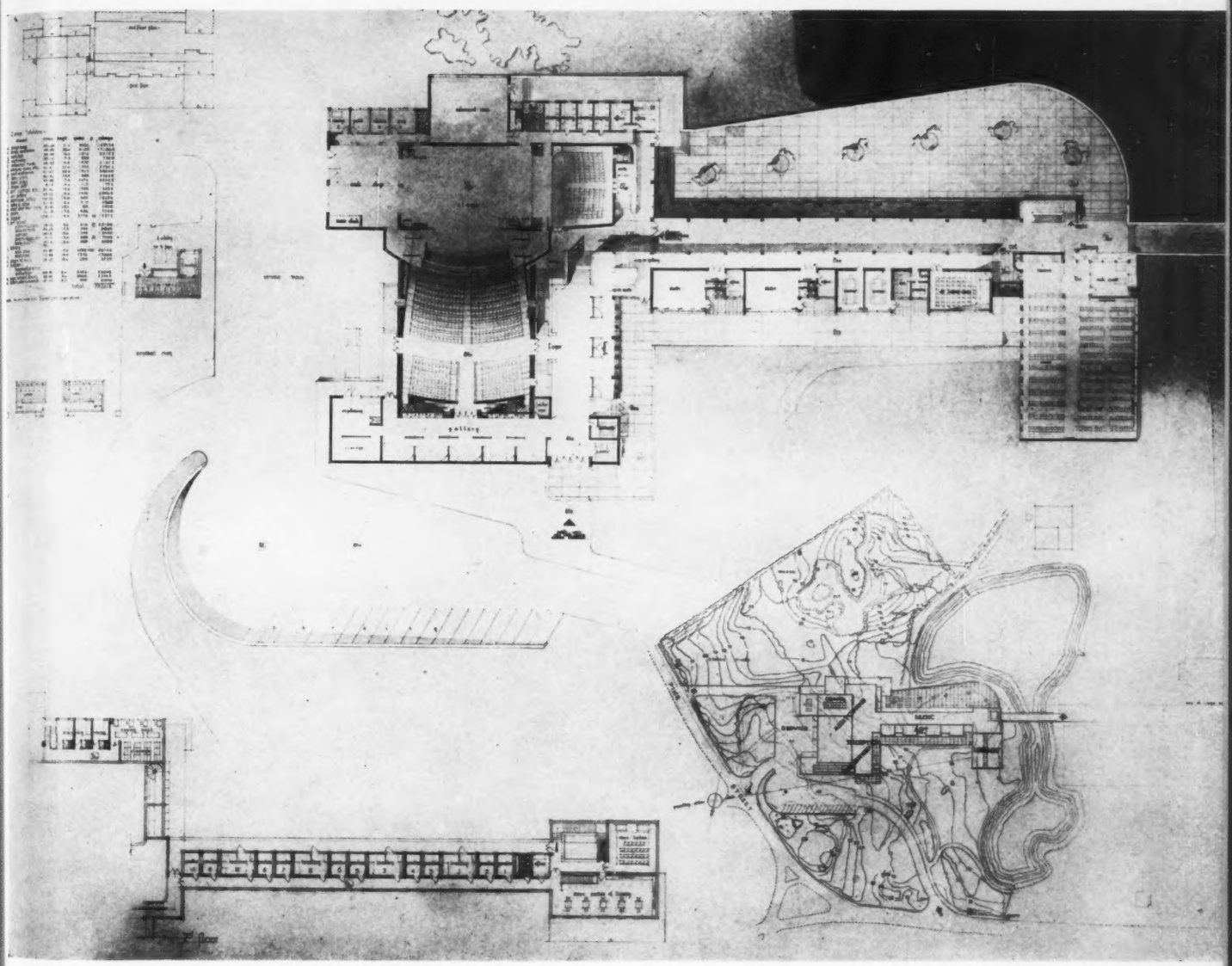
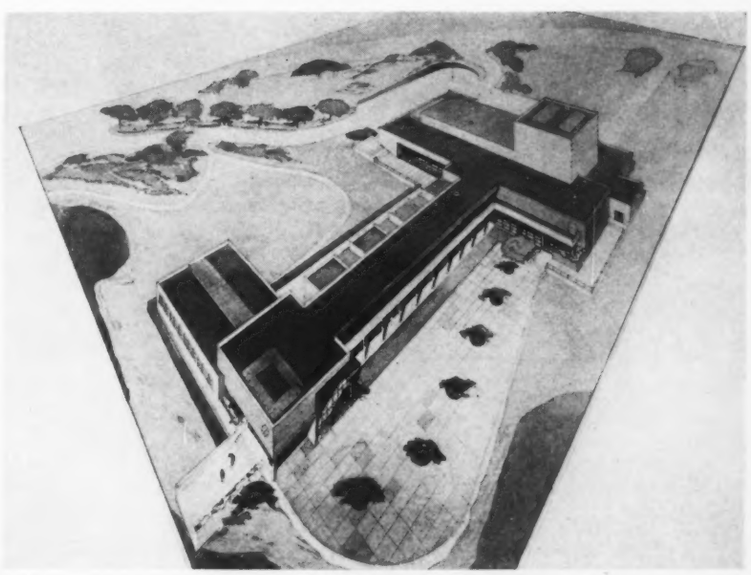
The results of the post office competition are in a way inconclusive. The very simplicity of the façade problem presented made it difficult both to design and to judge.

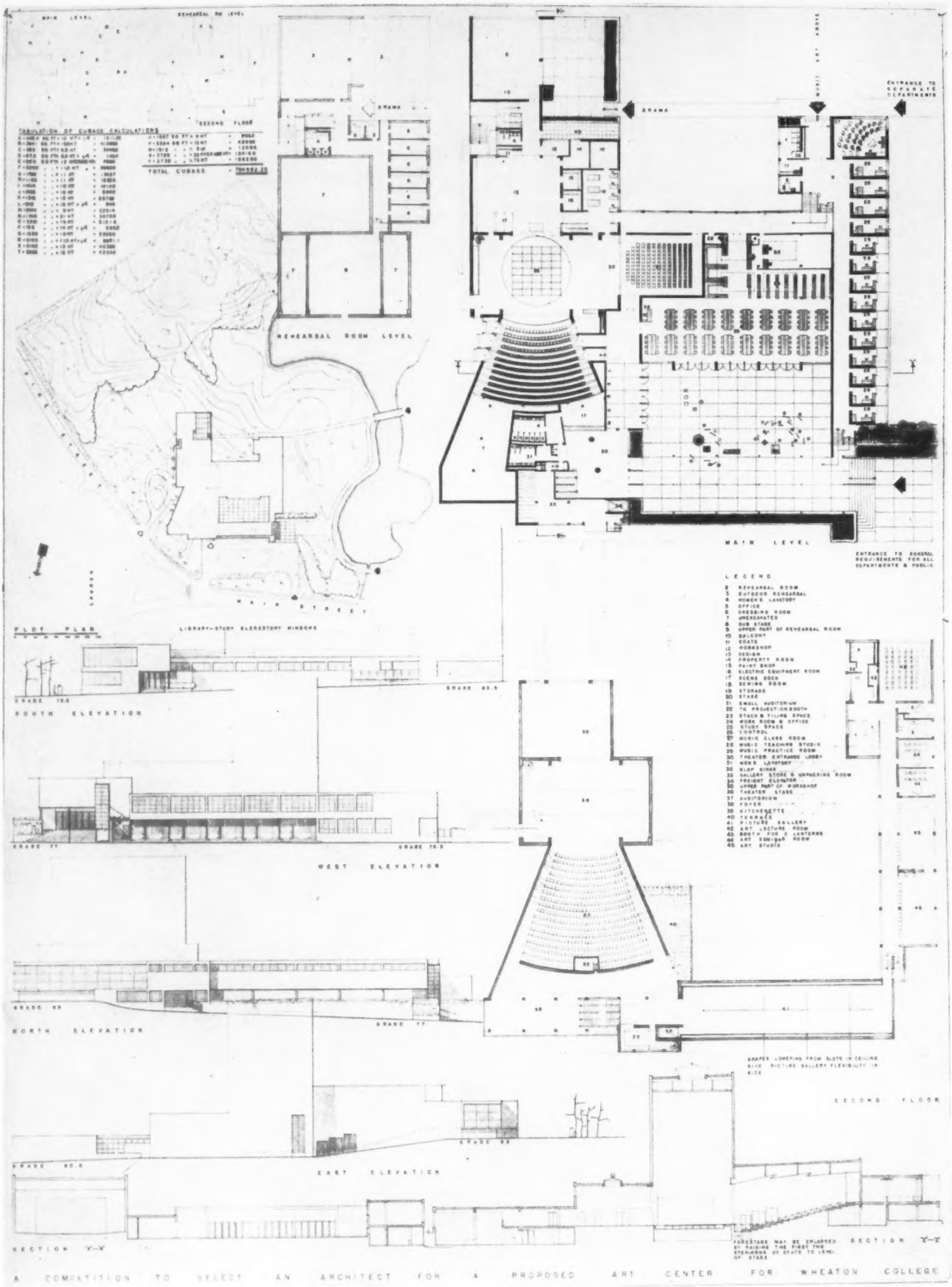
Three things, it seems to me, might well have been demanded: correct scale, suitable character, and beauty of proportion. The ten prize drawings show a general excellence in the third of these qualities, which speaks well for the basic taste of American architects. In the other two qualities there is the most extraordinary divergence. Post office character, particularly when the post office is a small one, is an elusive thing. The building cannot be too monumental; it should look public, and not commercial; and, without being ostentatious, it should not be, I feel, confused with, say, a public library or a house. In character, the submitted designs seem generally to be adequately handled, though there is a certain bank-like stolidity in some of them.

It is in scale that there are the greatest and the most significant differences—to such a degree, in fact, that one is tempted to say that, if the scale of one is right, the scale of others must be totally wrong. Both the designers and the jury seem to have forgotten at times that the problem was one of a *small* post office, and to have neglected entirely the telltale scale figure for each elevation. Thus we have Nos. 390, 169a, 205, which seem buildings that should be at least twice the dimensions given. Their proportions are those we associate with the largest and most monumental structures, and yet their bay spacings are narrower than those of a country-house piazza. Any design for a large building, cut down to half its scale, will look, not grand, but dinky. Thus, openings of the same size in different designs are

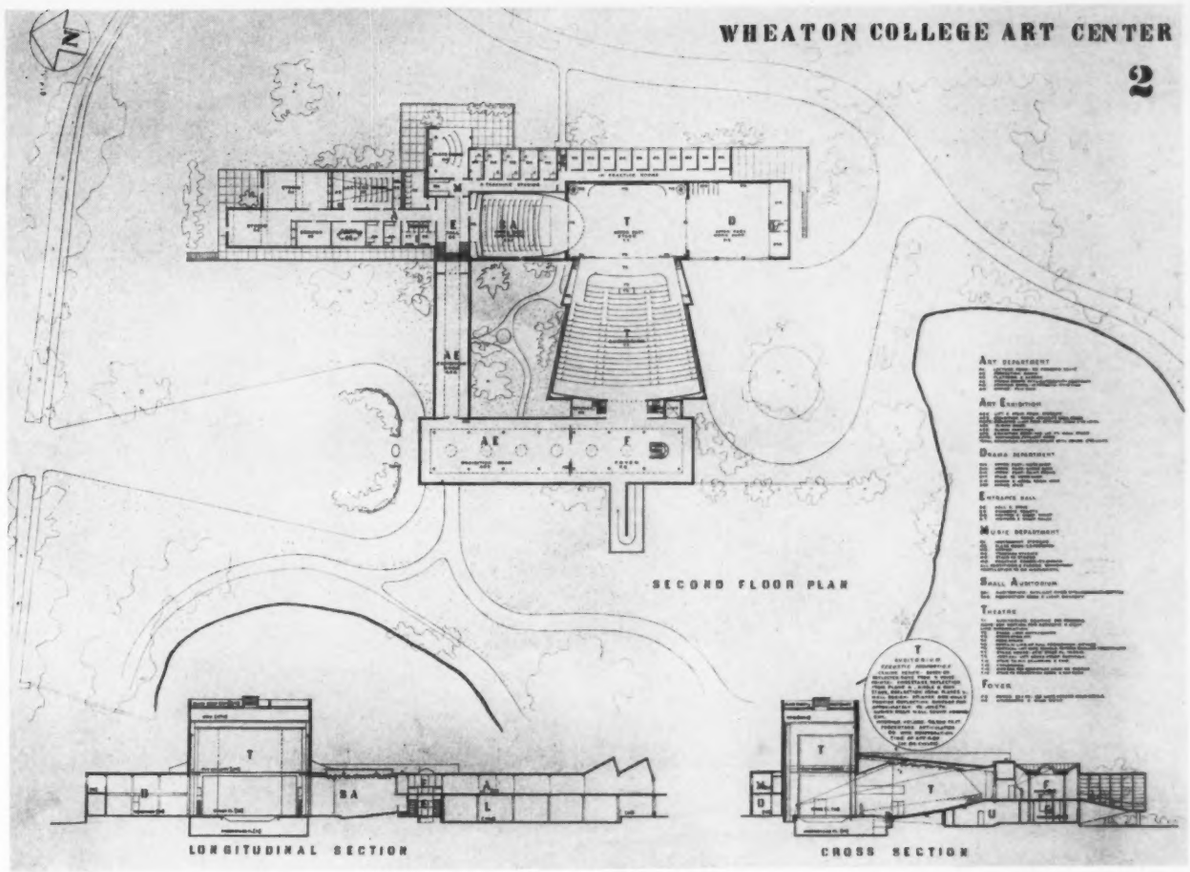




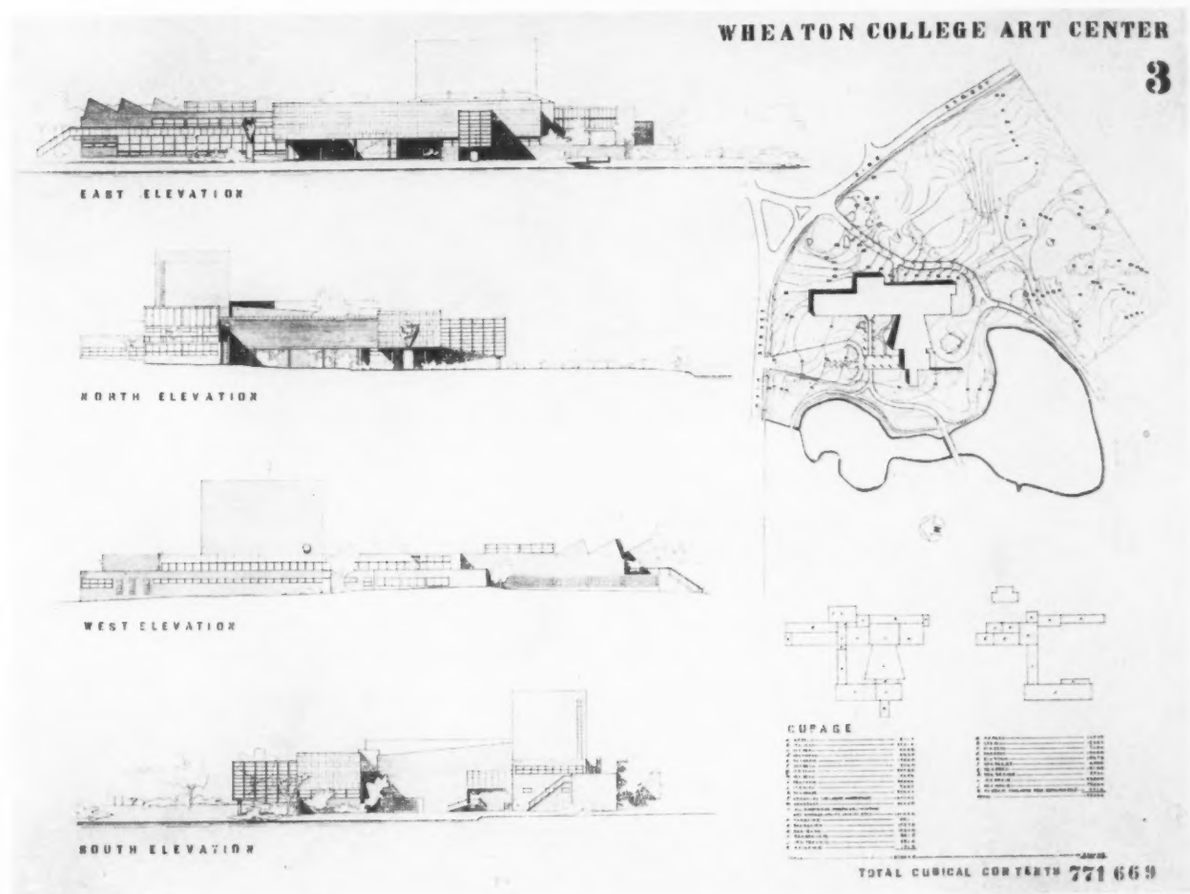
Third place in the Wheaton College Competition went to the team of Pierre Bézy, John W. Stedman, Jr., and Paul L. Wiener of New York

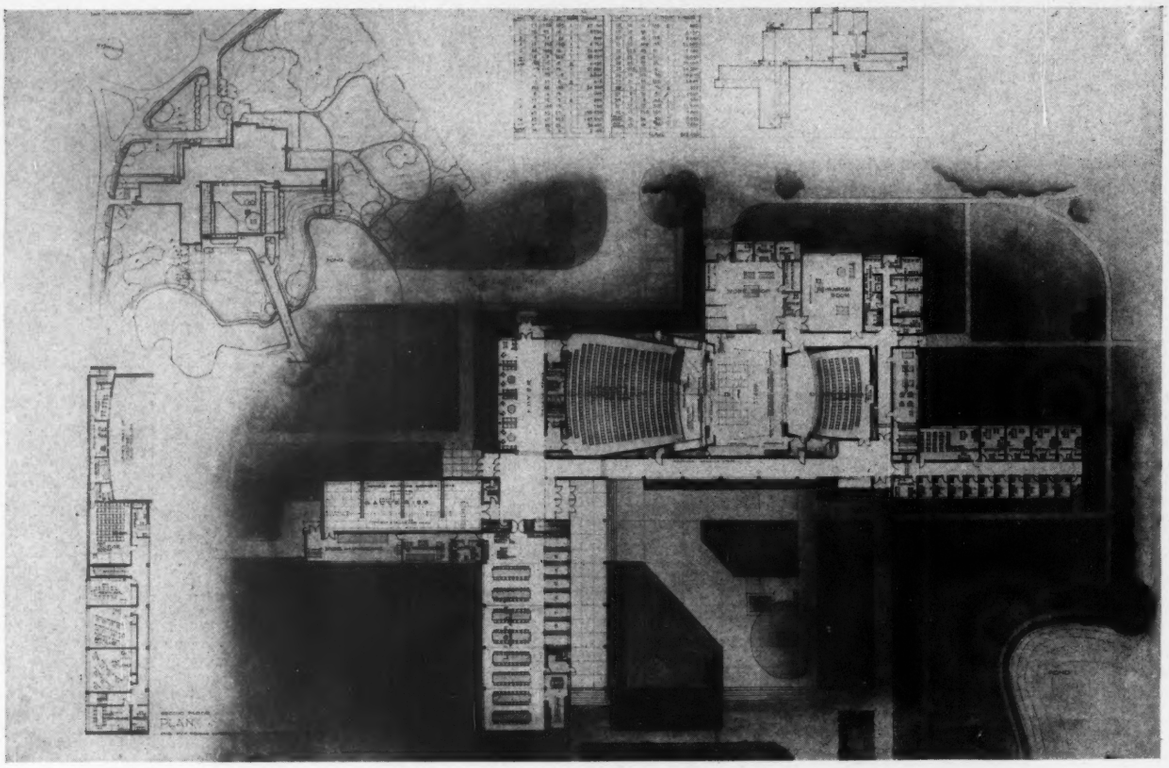


Alexis Dukelski of Jersey City, N. J., who consistently does well in competitions, was placed fourth by the Wheaton College jury

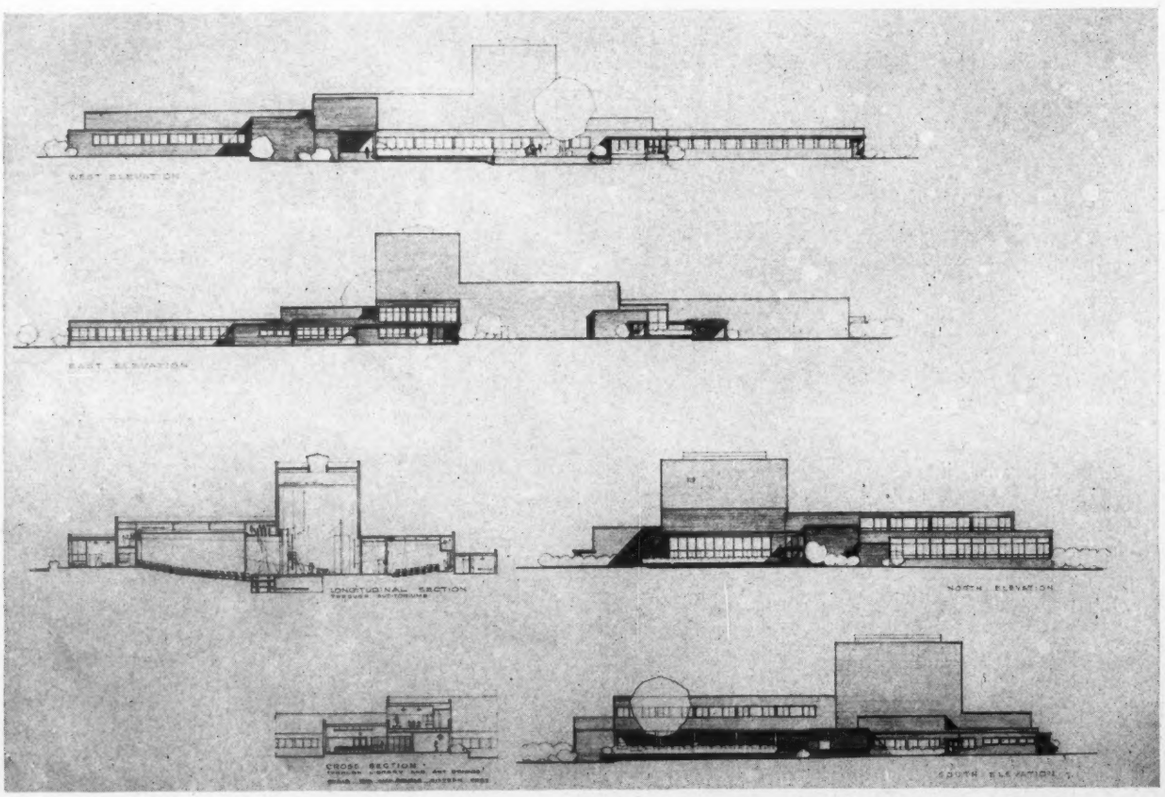


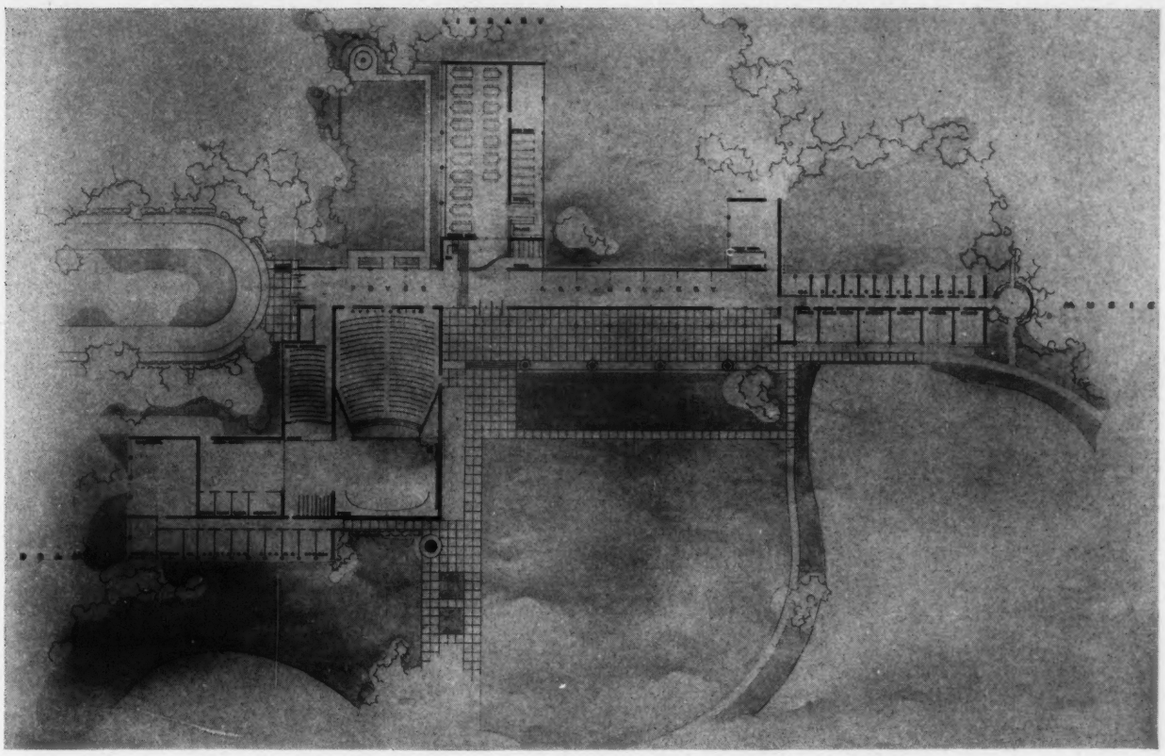
Three designs were placed fifth: this one is by Percival Goodman of New York

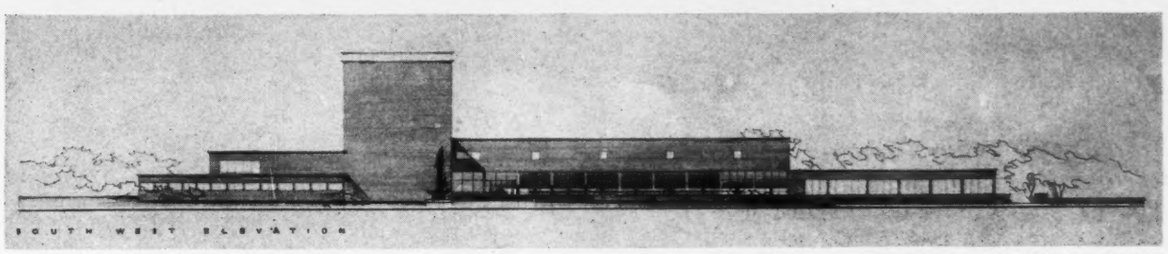




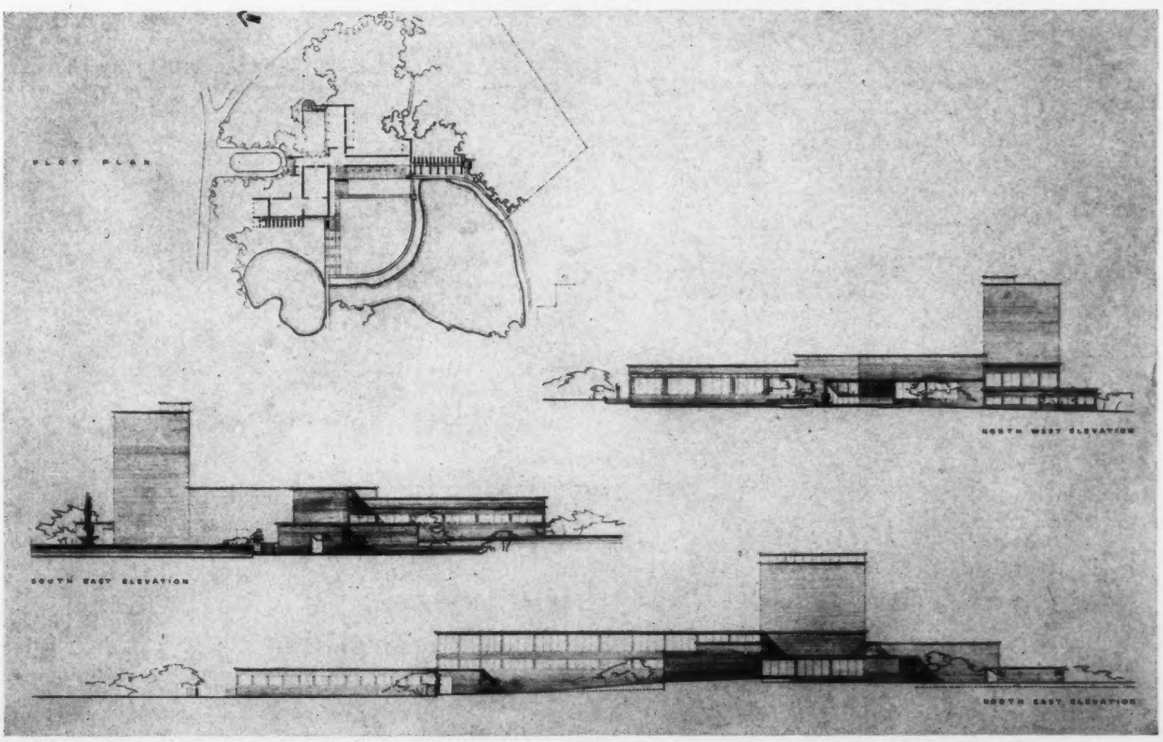
The firm of Lyndon and Smith of Detroit were among the four invited competitors in the Wheaton College Art Center Competition and placed fifth in the final

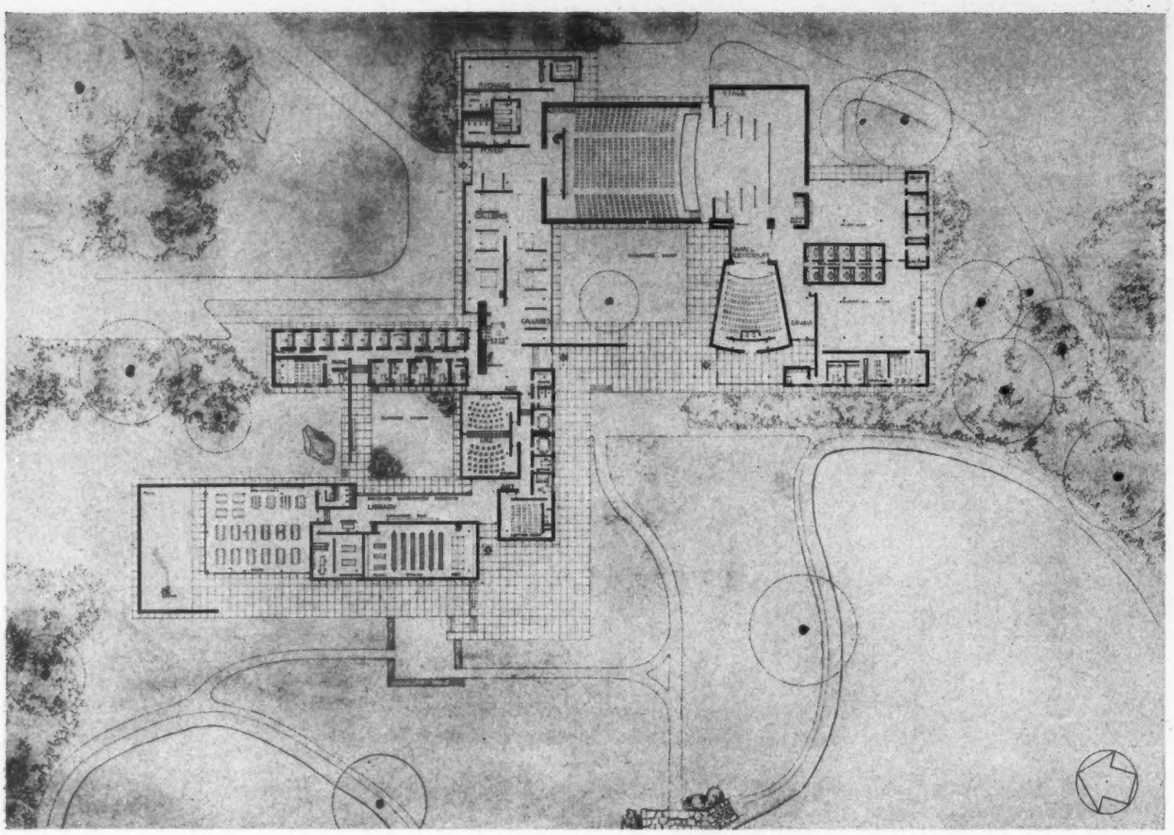




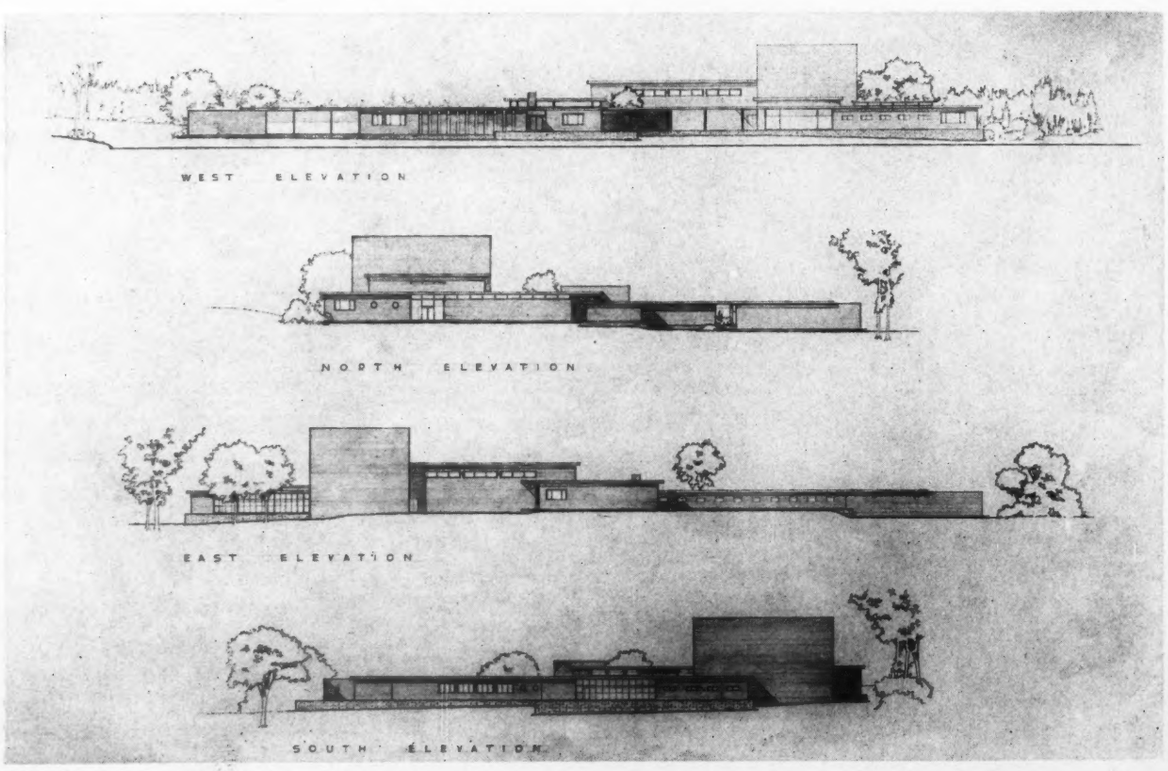


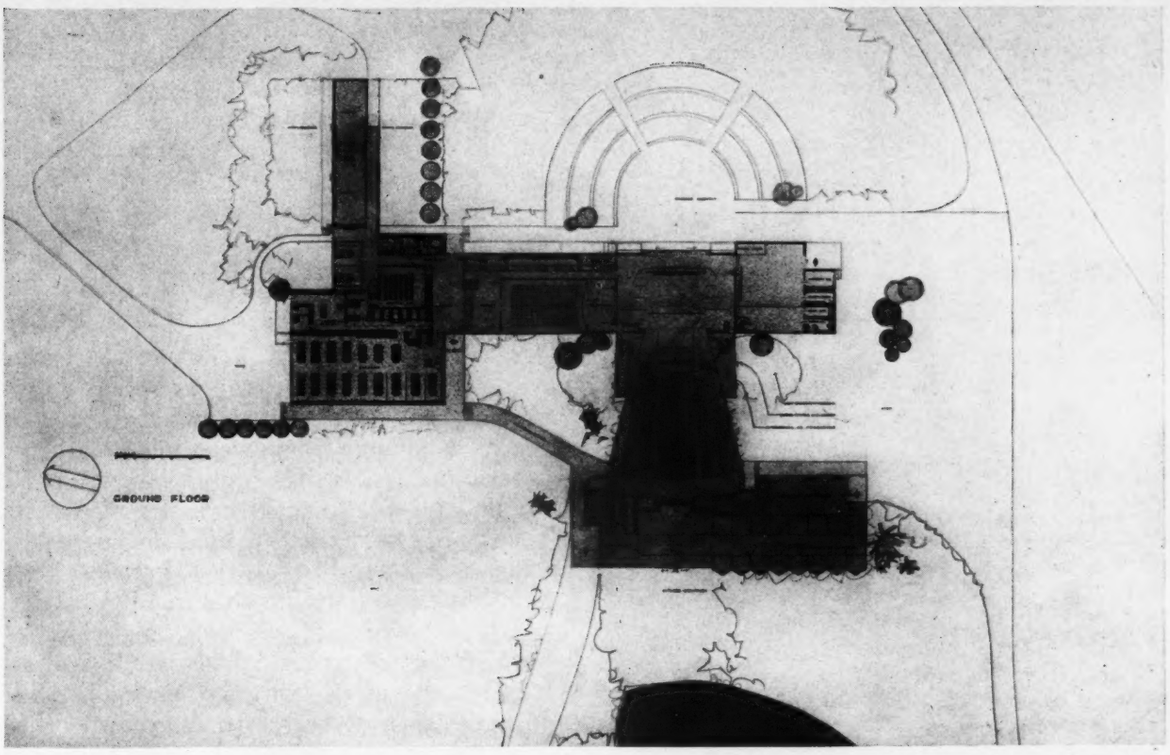
Eero Saarinen of Bloomfield Hills, Michigan, was also placed fifth



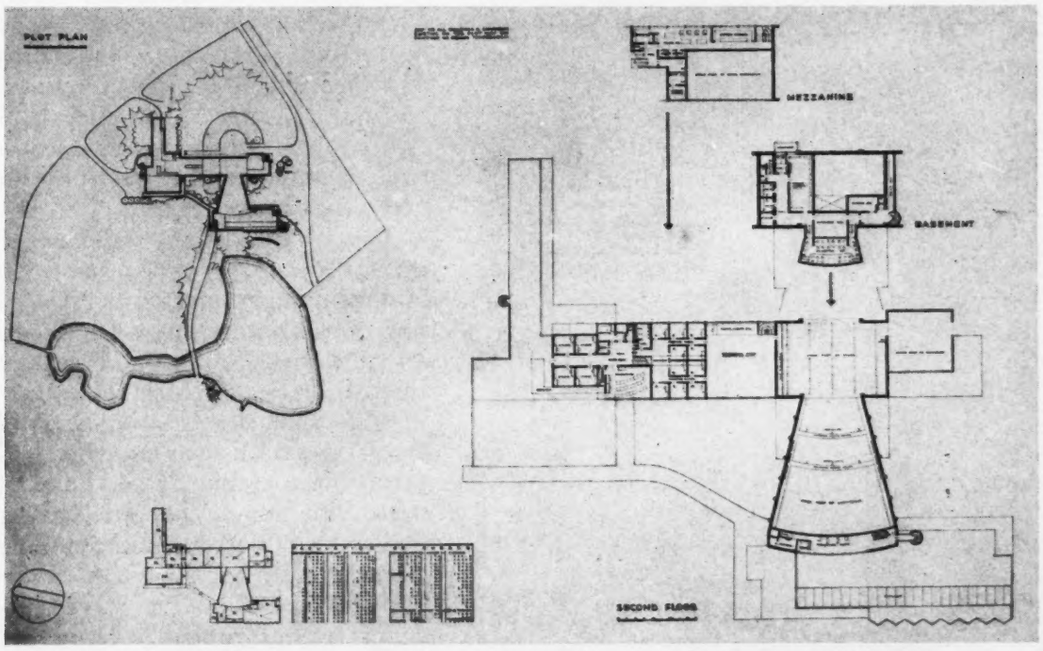


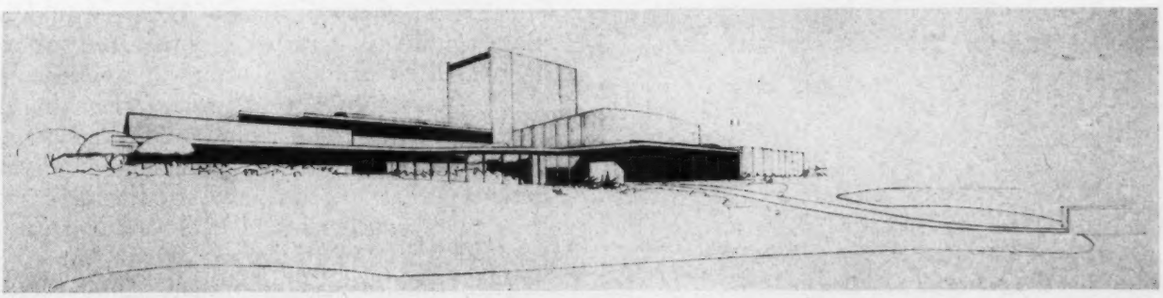
Carl F. Brauer, William T. Priestley, Jr., and John B. Rodgers of New York were successful to the extent of winning a Mention in the Wheaton College competition

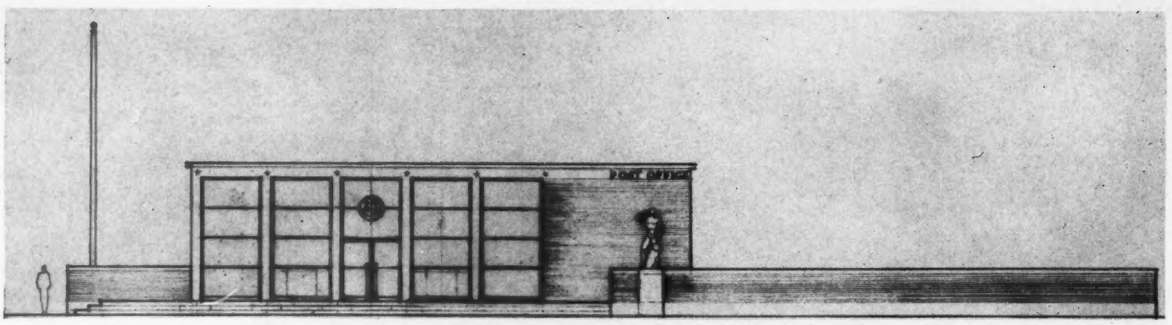




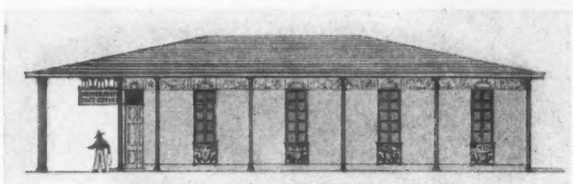
Invited competitor Richard Neutra of Los Angeles also got a Mention



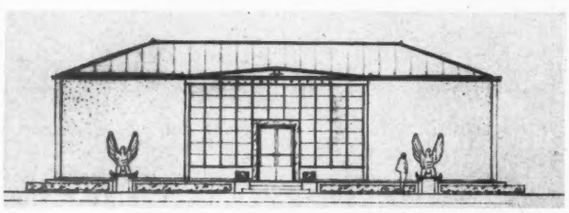




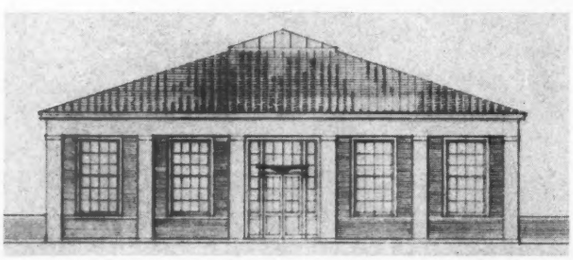
151-A JOHN EDWARD MILLER



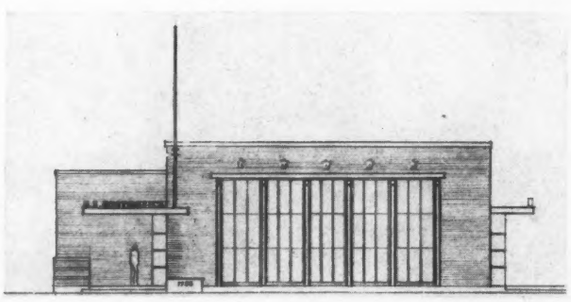
210 HARVEY STEVENSON & EASTMAN STUDDS



072 ARTHUR F. DEAM



323-A CARL F. GUENTHER



169-A T. MARSHALL RAINEY

Five of the ten designs awarded prizes in the recent federal competition for the design of small post offices are shown here. The other five are presented on the facing page

treated by some competitors as simple, domestic-looking, double-hung windows, and by others as though they were metal sashes of superhuman size. Theodore White's design might have been excellent in its direct simplicity, but something made him add arched panels at each end to falsify the scale entirely. Similarly, Theodore Fletcher's design, with its five 6-foot-odd door-windows, might possibly have had a treatment which would make it look less enormous. On the other hand, Miller and Guenther's 4-bay stone design errs on the other side and details its entrance in a way that suggests an 8-foot house door.

Of the more monumental designs, Carl Guenther's design 323 is undoubtedly the best, because the simplest, the most direct, and the only one which achieves real monumentality within the scope of the given scale. In addition, its simplifying of façade material into large sheets of marble, and its avoidance of unnecessary detail all help it.

Two of the designs stand out as definitely unusual creations—one that of Stevenson and Studds, with its covered portico supported on slim metal columns, its wrought-iron sign, and its generally "country" character; the other that of Arthur F. Deam, because of its daring simplification of the windows and door into one large glazed opening, and its delicate and playful neo-classic detail. Both of these designs, different as they are, have a somewhat similar character of invitation, and both take certain phases of American classic precedent as their inspiration. The Stevenson and Studds design would probably build better in the more rural communities of the South and Southwest; that of Arthur Deam would be more suitable in a rather sophisticated suburb or a small college town proud of its learning.

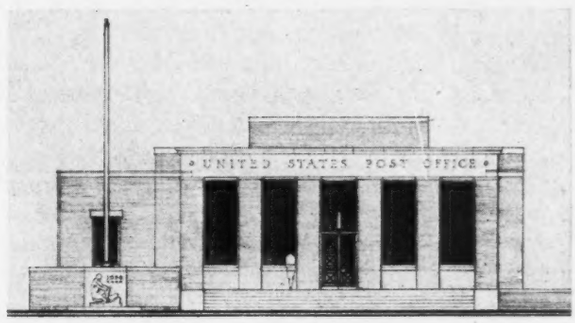
The success of almost any of these buildings, especially those which seem most effective in elevation, will be so dependent on the detailing that one only wishes the designers themselves might control it. This is especially true of the Deam design, which must be neither finicky and effeminate nor stodgily

archaeological. Mr. Miller's design 151a is another unusual design which might be made or broken by its detail. On the face of it, it is over-scaled and suffers like those already mentioned from seeming to be a larger building cut down; yet one can imagine it so sensitively and beautifully detailed as to have an almost jewel-box character of marble and glass and seem to be the small building that it really is.

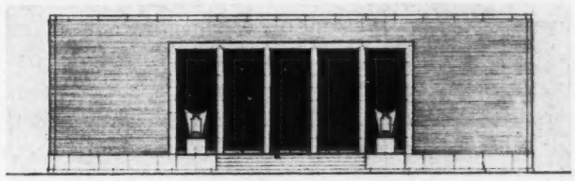
Inconclusive as the results of this competition may seem, one thing is undoubtedly true —they have brought out an imaginative quality of design, in at least four of the ten examples, which is sorely needed in our official architecture. So many of our small post offices are "merely adequate"! They have no excessive faults, but as one goes through country villages and the small towns where they have been built one is appalled at their universal dullness and a sort of hard, bored-looking detail. With a few exceptions, post offices built from these prize designs might at least avoid this curse, and one can well imagine buildings built from No. 323, No. 072, No. 210, and No. 151a really adding to the beauty and the interest—even the amusing quality—of many of our towns. This is enough to have made this competition worth while.

The competition system has undoubtedly, in these two first large-scale trials, not only resulted in bringing out the work of many architects who otherwise would have had little immediate chance, but also, I believe, proved itself from the point of architecture itself. In both of the competitions, the best designs have a quality which would not, I believe, have been obtained had the design been commissioned in the ordinary way. Competitions lead inevitably to experimentation in design, and the effects of that experimentation will be seen not only in the buildings finally erected, but even more in the education they give to juries, to architects, to clients, and to the public.

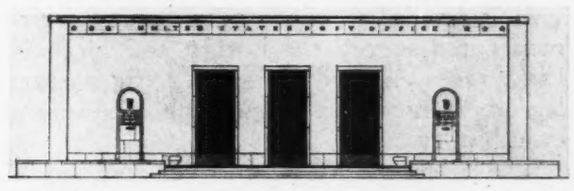
The prize-winning design and the three designs receiving Honorable Mention in the Government's recent Covington, Ky., Post Office and Court House Competition are on page 16 of the Advertising Section



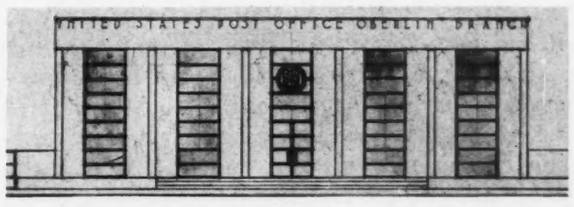
390 FRANCIS W. ROUDEBUSH



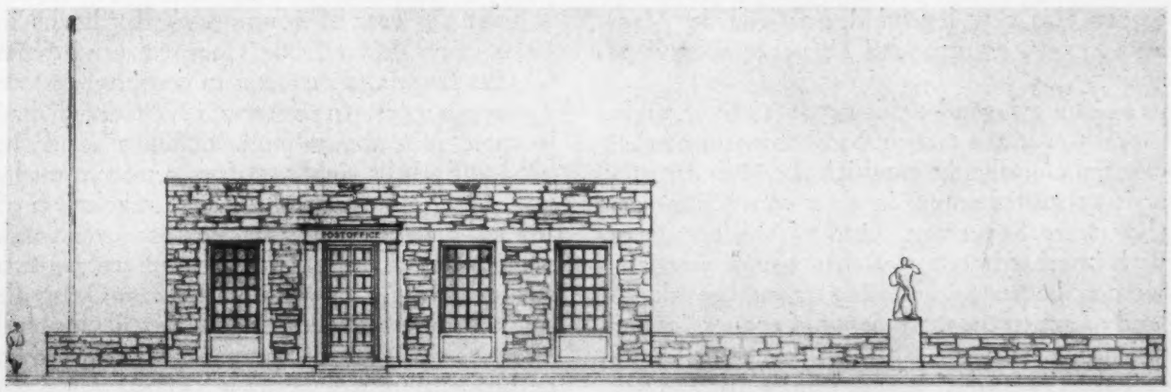
205 THEODORE FLETCHER



202-A THEODORE BALLOW WHITE



323 CARL F. GUENTHER



151 JOHN EDWARD MILLER & CARL F. GUENTHER

PARACHUTING ARTISTS

BY ROBERT L. ANDERSON

EDITOR'S NOTE:—*This article is the eleventh of a series of connected discussions by Mr. Anderson of Art Philosophy, designed to make clear the changes that have taken place in the ideology of the world outside architecture and their impact on our architectural thinking.*

IT HAS been pointed out that toward the close of the 19th century humanity's recurrent interest in economic equality received dynamic impetus. For convenience such development was referred to as the Religion of the Social Ideal. As was suggested, the impact of this new religion upon artists and their inherited Religion of Art was to be terrific.

Under the Religion of Art the artist could rest content in the belief that his art was the great universal synthesis by means of which men could survey the history and ideals of their race. Art, so ran this 19th century legend, transcended religion, philosophy and even history.

The legend persisted even when men shifted allegiance from retrospective to prospective evolution. Art, so ran the remodeled legend, was to preview the Future as competently as it had post-viewed the Past.

Under the Religion of the Social Ideal, however, it was no longer possible to subscribe to such an exalted conception of art. For according to this new way of thought, it was the economics of society, not its philosophy or its art, which provided the synthesis by means of which men were to survey and evaluate the past, the present and the future. Economics, so ran this new legend dramatized by Marx and Engels, transcended all other spheres of activity.

This new legend—this new way of thought—was to act as a terrific bombardment of that celestial cloudbank on which the 19th century artists reclined secure in their conviction that they were Supermen. One of the results of such bombardment was that young men and women began parachuting from the cloudland of art to the *terra firma* of economics and politics.

Take the case of Bernard Shaw. In 1882 he attended a lecture by Henry George on land nationalization. As a result of the revelation received there, all the controversial subjects of his day became "mere middle-class business . . . The importance of the economic basis dawned on me." Someone told him to read *Das Kapital:* "Karl Marx," he once said, "made a man of me." Shaw's subsequent career as a Fabian Socialist began.

Or the case of Jack London, for instance. Taking the road with Coxey's Army in 1894, somewhere along the line of march he was told about *The Communist Manifesto.* On reading it he "capitulated utterly to Karl Marx's reasoning." When, three years later, he joined the Klondike gold-rush Marx's *Capital* (together with Darwin's *Origin of Species* and Milton's *Paradise Lost*) went over Chilkoot Pass on his back. Strange baggage for one prospecting for gold, mineral or literary. But London had already achieved notoriety as California's "Boy Socialist."

Or consider the case of Mary Heaton Vorse who, at the time of the Lawrence strike of 1912, was writing about the theatre. Reading a newspaper account of the strike she thought: "Before night someone is going to send me to Lawrence." Harper's Weekly sent her. What she saw there, together with the unemployment of the winter of 1914 aroused, as she wrote in *Footnote to Folly,* "an indignation whose fire has never gone out." She had begun on that long trail which was to lead her from literature and the theatre to all the major strikes of the country.

Take the case of young Jack Reed who in 1910 came down from Harvard (and from Charles Copeland's courses in composition) to become a poet. In *English 12,* "Copey" had lectured him about "high visibility" and the need to find the right words to render what he saw. Sent to report the Mexican revolution of 1913, he developed such perfect eyes, such perfect command of words, that (to quote a somewhat malicious comment from Granville Hicks's biography of Reed) "even the chill intellect of Walter Lippmann was moved to enthusiasm."

Yet only three years later Reed could write:

"I have discovered, with a shock, how far I have fallen from the ardent young poet who wrote about Mexico . . . Please God, I intend to get back to poetry and sweetness, some way."

Reed's book, *Insurgent Mexico,* had been dedicated to Copey: *To listen to you is to learn how to see the hidden beauty of the visible world: to be your friend is to try to be intellectually honest.* On the one side beauty; on the other side intellectual honesty. No greater tradition could be passed from teacher to pupil: Charles Copeland's heart must have overflowed when he read the dedication.

Yet Jack Reed's prayer to get back to poetry was never to be granted. For he was to step faster and faster on that disastrous path which led from poetry to a grave in the heart of Red Russia. Rightly or wrongly, his intellectual honesty had conquered his love of beauty; the Russian Revolution had supplanted Copey's courses in literature. His great book is *Ten Days Which Shook the World.* His burial, at the age of thirty-three, was a revolutionist's burial in a foreign land. It is, perhaps, the most spectacular, the most tragic example of that passage from the Religion of Art to the Religion of the Social Ideal which we of the modern world have been compelled to make.

* * * *

These are but specific cases, serving to indicate the ferment which occurred when the 20th century Religion of the Social Ideal collided with the 19th century Religion of Art.

The ultimate result of it all was that men turned from the realm of art to the realm of economics and politics. Even the artists ultimately were to conclude that the drama of destiny must be staged in the politico-economic rather than in the æsthetic theatre.

It must be pointed out, however, that in the beginning men did not cleave so sharply between art and political economy as later they were compelled to cleave. As was pointed out in the January PENCIL POINTS, the inherited Religion of Art had begun to collapse as men became increasingly preoccupied with economic and social maladjustment. It was, however, but a partial collapse. For while men threw overboard art as the pursuit of beauty, they became dazzled with art as the index of evolving civilization.

I have already commented at length concerning this notion of art as the index of evolving civilization. Yet I should like to make one further remark. From the close of the 19th century to the beginning of the World War, men were dropping from the cloudland of art toward the terra firma of politics and economics. The notion of the artist as index of evolving civilization can be considered, I think, as the parachute which dropped them gently from the clouds.

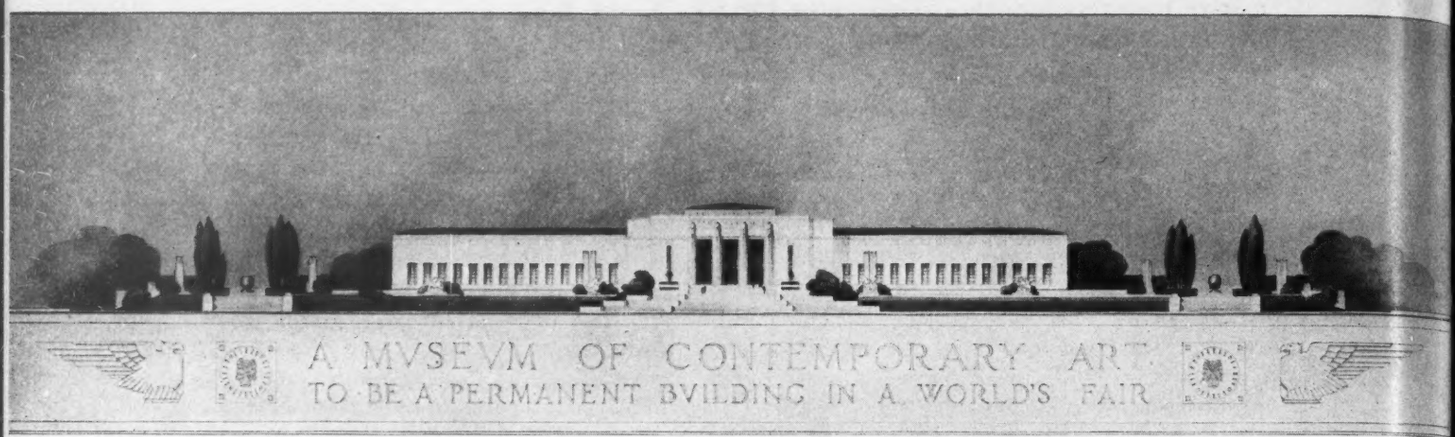
True, having encountered Marx, Bernard Shaw moved almost at once to Socialism. Yet Shaw studied simultaneously the scores of Wagner and the text of Marx: William Archer's first sight of him was in the British Museum where he was studying alternately a translation of *Das Kapital* and the score of *Tristan und Isolde.* As Edmund Wilson pointed out in the February *Atlantic,* the offspring of such mating was Shaw's defense in *Man and Superman* of the "artist-philosopher." The "artist-philosopher" was Shaw's parachute from the Religion of Art to the Religion of the Social Ideal.

I cannot recall that Louis Sullivan ever used the phrase "architect-philosopher." It is immaterial in any case. For *Kindergarten Chats* makes it abundantly clear that he conceived the architect as such. Henry Harrison's phrase in the July 1937 PENCIL POINTS—BEHIND THE ARCHITECT, THE PHILOSOPHER—merely states bluntly what Sullivan stated circuitously.

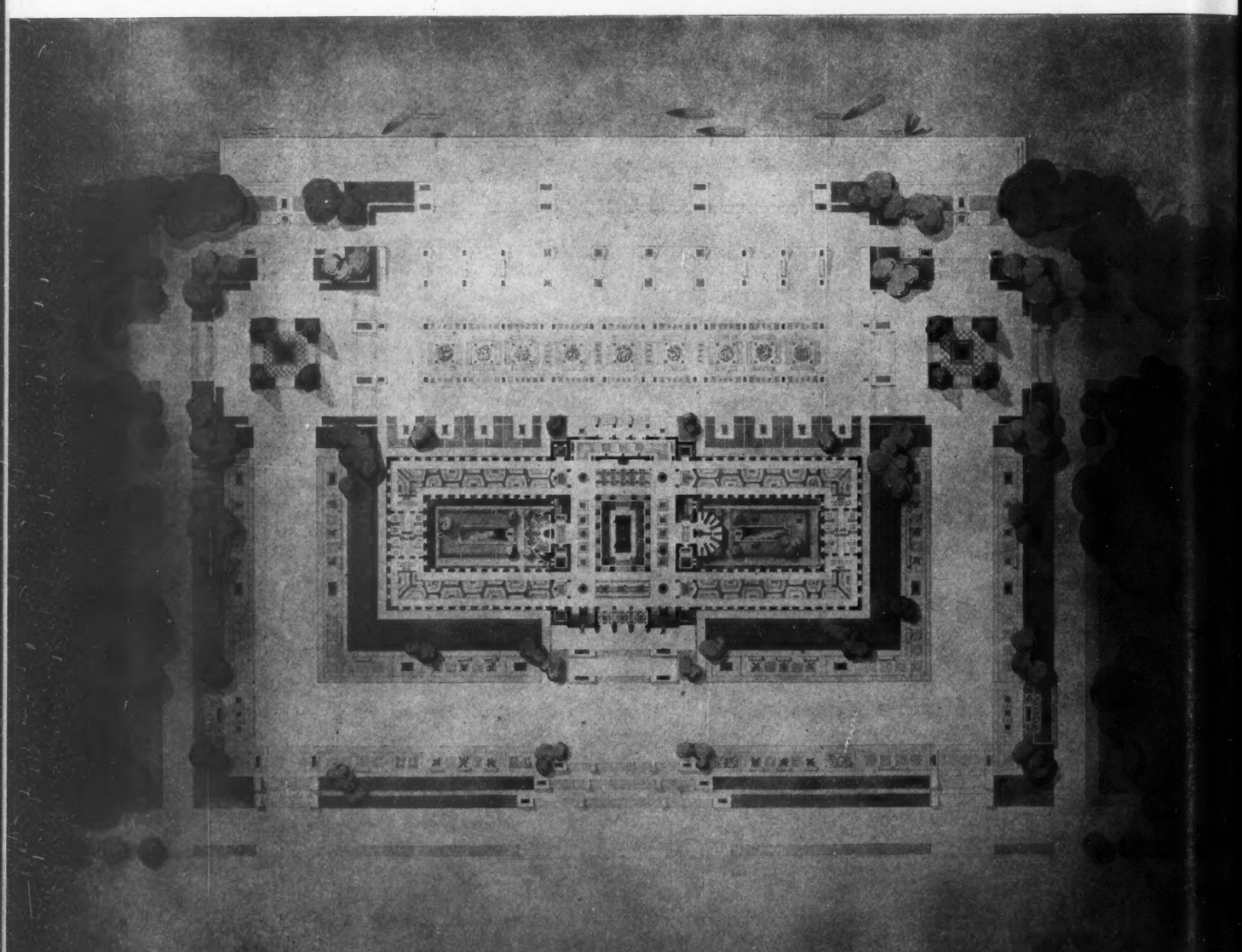
As in the case of Shaw, Sullivan's concept of the architect-philosopher must be considered as his parachute from the Religion of Art to the Religion of the Social Ideal. Consider Charles Whitaker's comment on Sullivan in *Rameses to Rockefeller:* " 'Form follows function.' Almost everyone thought, and still thinks you meant those three words to apply to buildings. Few knew, as you knew . . . that nations take their form from their function . . . It is impossible for the form of a civilization to grow out of the functioning of an imperial struggle based on economic anarchy."

I doubt that Sullivan's parachute had dropped as close to the ground as Mr. Whitaker suggests. I doubt that Sullivan saw the drama of destiny in terms of economics: he dreamed too tenaciously (as Mr. Whitaker dreamed to a lesser extent) in terms of an Hegelian, Nietzschean, pre-Marxian Superarchitect.

Today men have completed the descent from the Religion of Art to the Religion of the Social Ideal. They have folded up the parachute of the artist-philosopher, and stalk anxiously over the domain of politics and economics. Consequently architects must put away the notion of a universal æsthetic. They must pursue, as did all the great architects of the past, a practical æsthetic.



An array of facts and suggestions gleaned from a comprehensive study of museums by Olindo Grossi, in his third year as a student at the American Academy in Rome, culminated in his design for "A Museum of Contemporary Art to be a Permanent Building in a World's Fair," presented here and on the following pages as a contribution to the literature on museum lighting. Research data and measured drawings accompany Grossi's museum design



THE LIGHTING OF MUSEUMS

A STUDY MADE AT THE AMERICAN ACADEMY IN ROME

BY OLINDO GROSSI

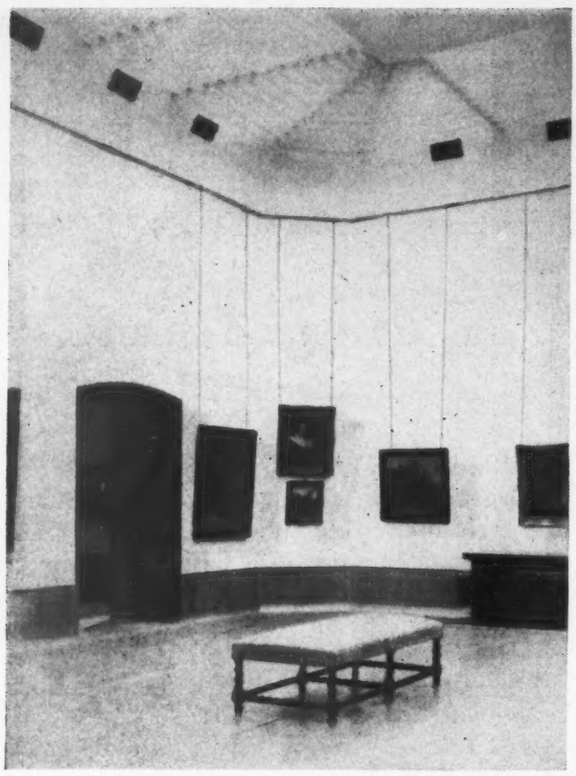
In recent years theories of museum design have found extensive expression in this country as each large municipality has sought to give improved housing to its art treasures. These museums are permanent monuments that contribute in large measure to the education and pleasure of the citizens. It is with a just sense of civic pride that a handsome exterior and a proper setting are demanded of the museum.

In plan, this building requires the satisfaction of its logical program; consisting of the orderly disposition of the galleries, their ready accessibility and ease of circulation, their varied shapes and sizes, their flexibility, their proper relation to the exhibits, as well as landscaped terraces and inner courts that may afford restful punctuation to the routine of the visit. But of the important factors that consciously or sub-consciously influence the visitors' enjoyment of the art objects displayed, the quality of the lighting is perhaps the most persistent offender in the functional design of a museum. Too often annoyance and weariness, that can be ascribed to dull lighting or unfortunate reflections and glare, interfere seriously with the pleasure derived by the visitor in his study of the exhibits.

Museum collections, with their variety of material displayed, demand different types of lighting as the exhibits vary. In a two-story museum, the first floor may be side-lighted or artificially lighted and the second floor lighted by some form of skylight. While existing museums may be studied for lighting, it is recommended that for varying conditions or for a new design of lighting, some actual experimental gallery in the form of a box or model be built and altered until acceptable results are obtained.

The regular overhead skylight is often used, despite its faults familiar to all. Light from the simple form of skylight has a flat quality which is poor for sculpture and three-dimensional objects in general, as projecting forms cast disturbing shadows and modelled surfaces lose their interesting subtleties. Paintings are so exhibited, but not in a flattering manner. With this type of lighting, the maximum intensity of light is on the floor instead of the walls. Such strong floor illumination is not only misdirected but tends to cause reflections difficult to avoid. The walls themselves are lighted unevenly for they vary in amount of light from the darker corners and upper portions to the lighter central and lower portions. The sunlight side of the skylight gives a quality and color of light different from the other sides. Such a variation has its noticeable effects on the colors used by the artist in painting. Then, too, a disturbing glare is noticeable, especially on entering a gallery. This is due to the fact that the lay lights form the brightest surface in the room and are readily visible.

Galleries with novel and successful remedies for the shortcomings of skylighting can be found in the Boymans Museum at Rotterdam. Here the architect, A. Van der Steur, incorporated his findings after experimenting with a model gallery. To reduce the amount of light on the floor, an opaque canopy or velarium is used in the center of the ceiling. The size of this canopy is flexible, to suit seasonal variations in light intensity. When painted white this opaque portion of the ceiling does not seem unduly heavy or oppressive. At the sides of the center panel, opaque glass louvres or vanes are used to direct and deflect light to the side walls. The louvres are painted a mat white and sloped to conceal the skyline, thereby removing the bright exterior light and its glare from the direct line of vision. The walls are uniformly lighted by the use of different types of glass in the ceiling lights over the louvres. Etched or ground glass is used in the corners, transmitting more light than the opaque enamel and milk glass panes in the center. The atmospheric and neat result is su-



Het Museum Boymans

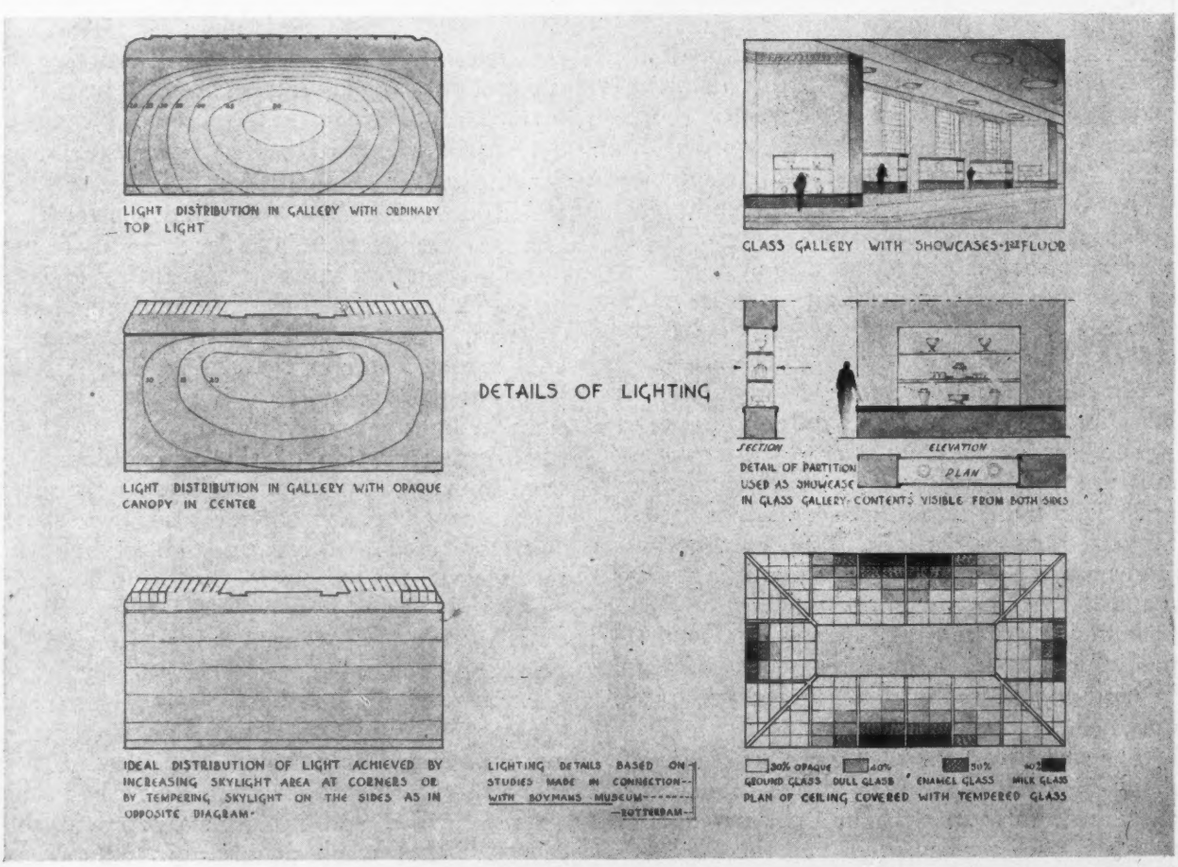
The detail sheet below analyzes the lighting in the gallery, above, of the Boymans Museum, Rotterdam, where an opaque canopy reduces the amount of light

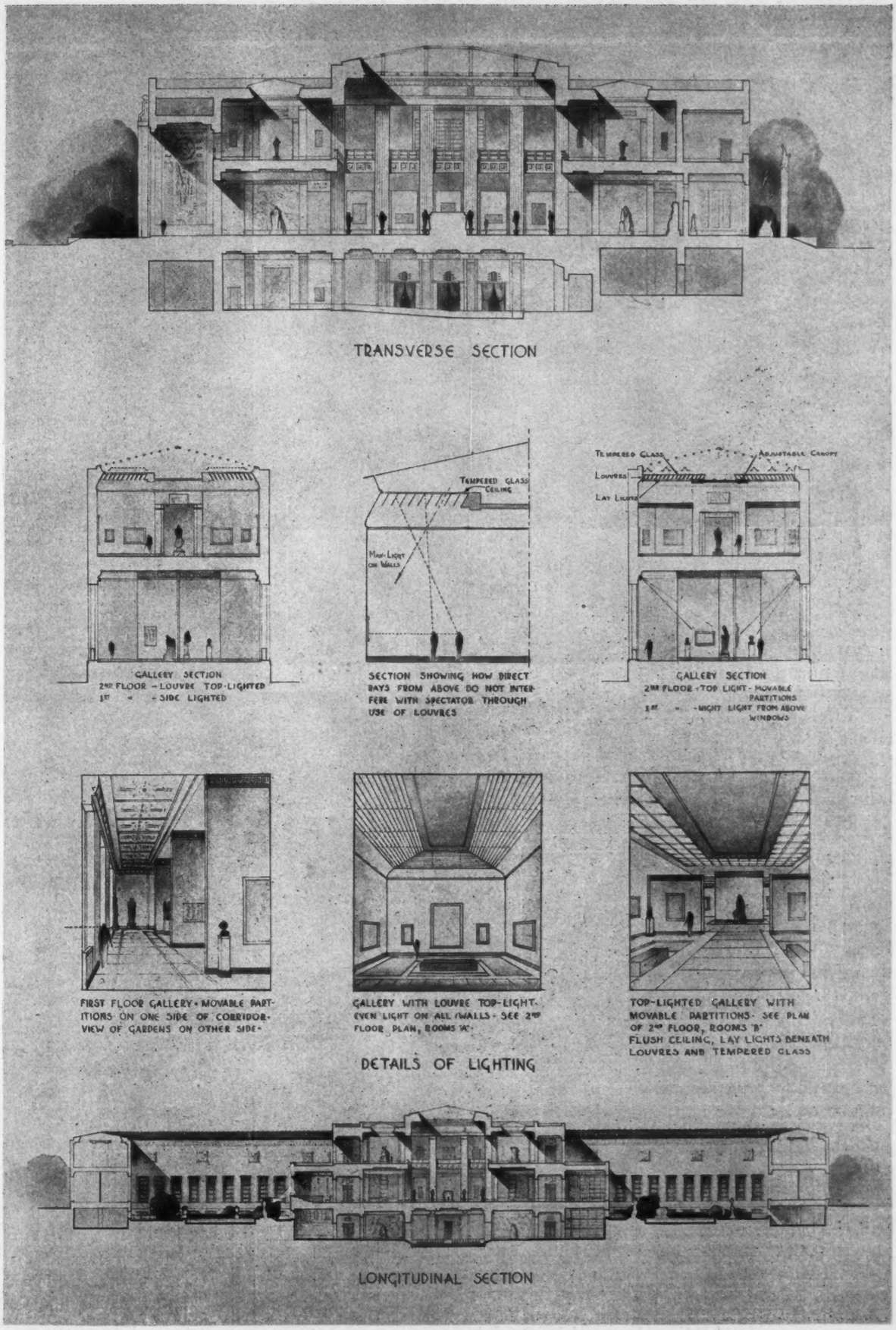
perior to walls with graded intensities of light.

In an effort to achieve the same effect, experiments were conducted with more skylight area in the corners than over the center of the walls but the light source became awkward in form and was not readily adaptable. The problem of equalizing the quality of light on all sides of the skylight is handled by the use of double-obscured glass screens on the sunny side. Many of the museums in this country have solved this problem by installing a series of narrow strip louvres at the skylight or over the lay lights. These louvres, adjustable to different positions, can be operated to control the intensity as well as the color and sunny quality of the light.

The artificial night light in the skylighted galleries of the Boymans Museum comes from above the louvres, also having the commendable qualities of being uniformly distributed, glareless, diffused and directed to the walls instead of the floor. These characteristics afford a cheerfully-lighted interior and are helpful in preventing "eye fatigue." For temporary exhibits, a similar effect can be obtained with natural or artificial light by stretching a diffusing cloth across a gallery at a height considerably lower than the source of light.

Of the other forms of natural lighting for a

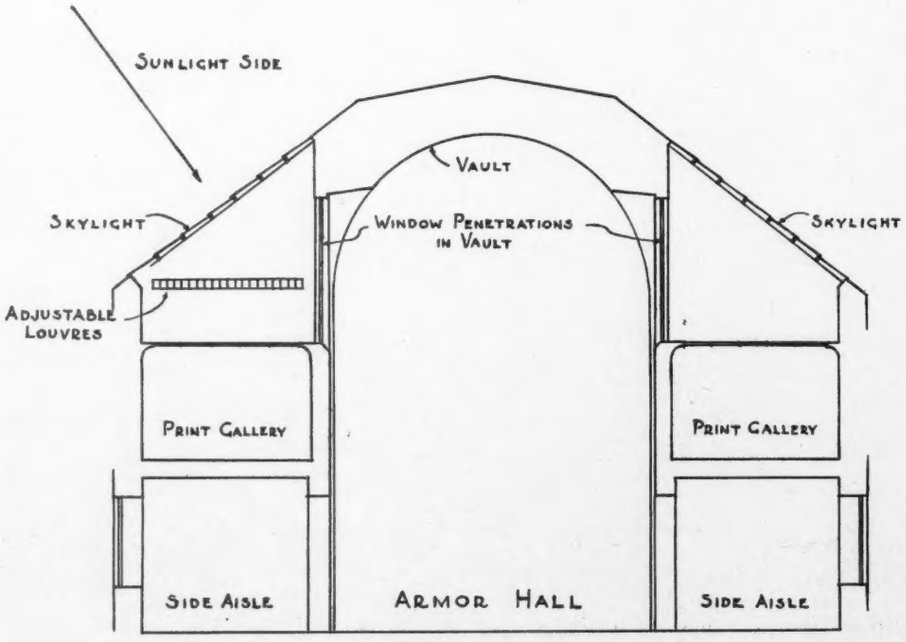

LIGHT DISTRIBUTION IN GALLERY WITH ORDINARY TOP LIGHT
GLASS GALLERY WITH SHOWCASES-1ST FLOOR
LIGHT DISTRIBUTION IN GALLERY WITH OPAQUE CANOPY IN CENTER
DETAILS OF LIGHTING
SECTION
ELEVATION
PLAN
DETAIL OF PARTITION USED AS SHOWCASE IN GLASS GALLERY-CONTENTS VISIBLE FROM BOTH SIDES
IDEAL DISTRIBUTION OF LIGHT ACHIEVED BY INCREASING SKYLIGHT AREA AT CORNERS OR BY TEMPERING SKYLIGHT ON THE SIDES AS IN OPPOSITE DIAGRAM
LIGHTING DETAILS BASED ON STUDIES MADE IN CONNECTION WITH BOYMANS MUSEUM ROTTERDAM
30% OPAQUE
40%
50%
GROUND GLASS
DULL GLASS
ENAMEL GLASS
MILK GLASS
PLAN OF CEILING COVERED WITH TEMPERED GLASS


TRANSVERSE SECTION
GALLERY SECTION
2ND FLOOR - LOUVRE TOP-LIGHTED
1ST " - SIDE LIGHTED
TEMPERED GLASS CEILING
MAX. LIGHT ON WALLS
SECTION SHOWING HOW DIRECT RAYS FROM ABOVE DO NOT INTERFERE WITH SPECTATOR THROUGH USE OF LOUVRES
TEMPERED GLASS
ADJUSTABLE CANOPY
LOUVRES
LAY LIGHTS
GALLERY SECTION
2ND FLOOR - TOP LIGHT - MOVABLE PARTITIONS
1ST " - NIGHT LIGHT FROM ABOVE WINDOWS
FIRST FLOOR GALLERY - MOVABLE PARTITIONS ON ONE SIDE OF CORRIDOR - VIEW OF GARDENS ON OTHER SIDE -
GALLERY WITH LOUVRE TOP-LIGHT - EVEN LIGHT ON ALL WALLS - SEE 2ND FLOOR PLAN, ROOMS "A"
TOP-LIGHTED GALLERY WITH MOVABLE PARTITIONS - SEE PLAN OF 2ND FLOOR, ROOMS "B" FLUSH CEILING, LAY LIGHTS BENEATH LOUVRES AND TEMPERED GLASS
DETAILS OF LIGHTING
LONGITUDINAL SECTION

STUDY OF GALLERY LIGHTING FOR AN ART MUSEUM

George Van Anda

This photograph of adjustable narrow-strip louvres, or Simon Ventilighters, and the system of night lighting installed between ceiling sash and skylights, was made over a top-lighted gallery of the Yale Gallery of Fine Arts, Yale University, New Haven, Conn., for which Egerton Swartwout, New York, was the architect, and French & Hubbard, lighting engineers. The louvres on each side are operated by a crank or lever on the floor below and, with the lighting, might be controlled by an electric eye in an ideal installation. The diagram below shows the design for lighting the new Armor Hall at the Metropolitan Museum of Art, New York City, with skylights transmitting light for print galleries as well as for penetrations in the vaulted ceiling

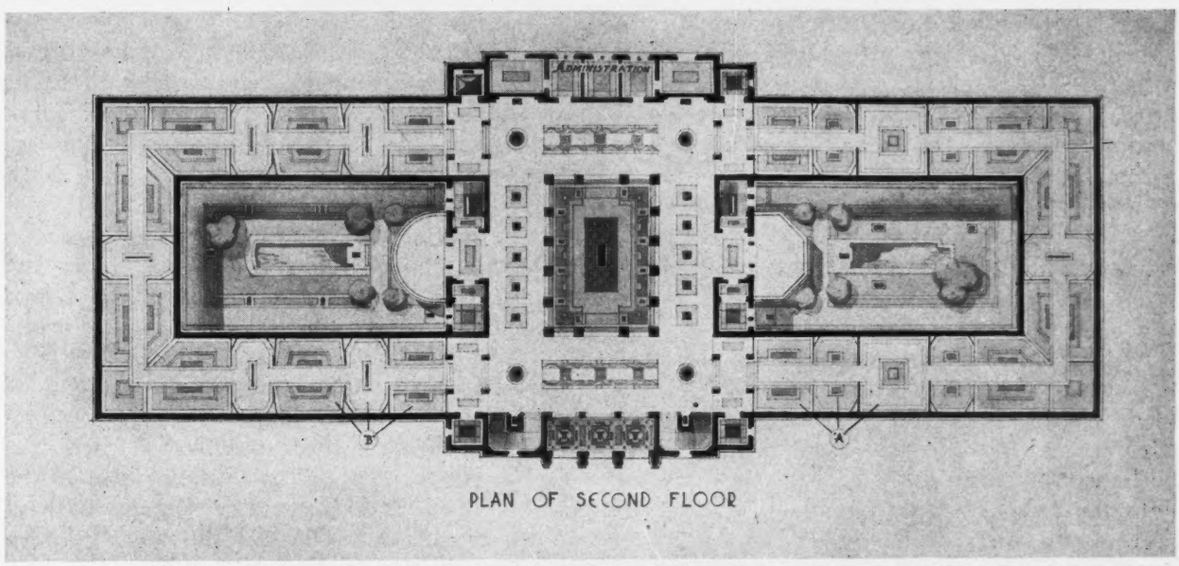


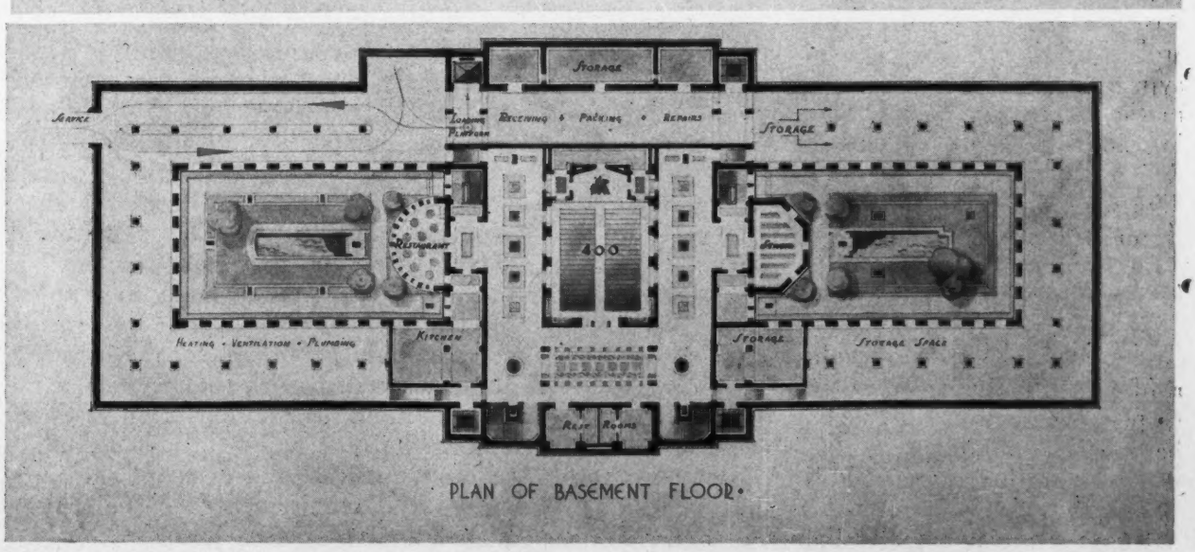
museum, the vertical window is perhaps the best. The attempt to light by a clerestory is usually unsatisfactory, as a great height of ceiling is required and much wall space is necessary above the objects displayed. With such conditions the room becomes so large that it is difficult to establish a good relation between the size of the exhibits and the proportions of the room, when the scale of the former usually suffers. In the inverted monitor of the Seager system, the shape of the room section is poor and the lower and darker central portion is weighty.

Vertical window lighting for three-dimensional objects such as sculpture, furniture, glass, etc., also has faults but with careful study they can be minimized. Only one window should be allotted to each space or room, as more than one will cause reflections. Splayed sides of the room, besides affording varied sizes and shapes, receive better light and help reduce the reflections which occur most often on the side opposite the window. It is recommended that the doors to the room be placed in the poorly lighted areas, generally near the window, to save the best lighted areas for the exhibits. The head of the window should be high enough to light the upper parts of the walls, and the sill below the eye level, so that the visitor can have a view of the outdoor exhibits and landscaping. The tiring effect of being enclosed in a building is a common fault of museum design. The relief and rest obtained while pausing to enjoy a view outside is an aid in making the visit more pleasant.

Artificial night light for a room with vertical windows should come from lights concealed in the jambs or head of the windows, as it is usually better to have both natural and artificial light emanate from the same points. The night lighting in the remodelled sections

The plans of Grossi's museum design show his ingenious and practical handling of museum requirements





Bulletin des Musées de France

At night, the treasures of the Louvre in Paris are illuminated by artificial light from the same direction as the natural light admitted during the day through vertical windows

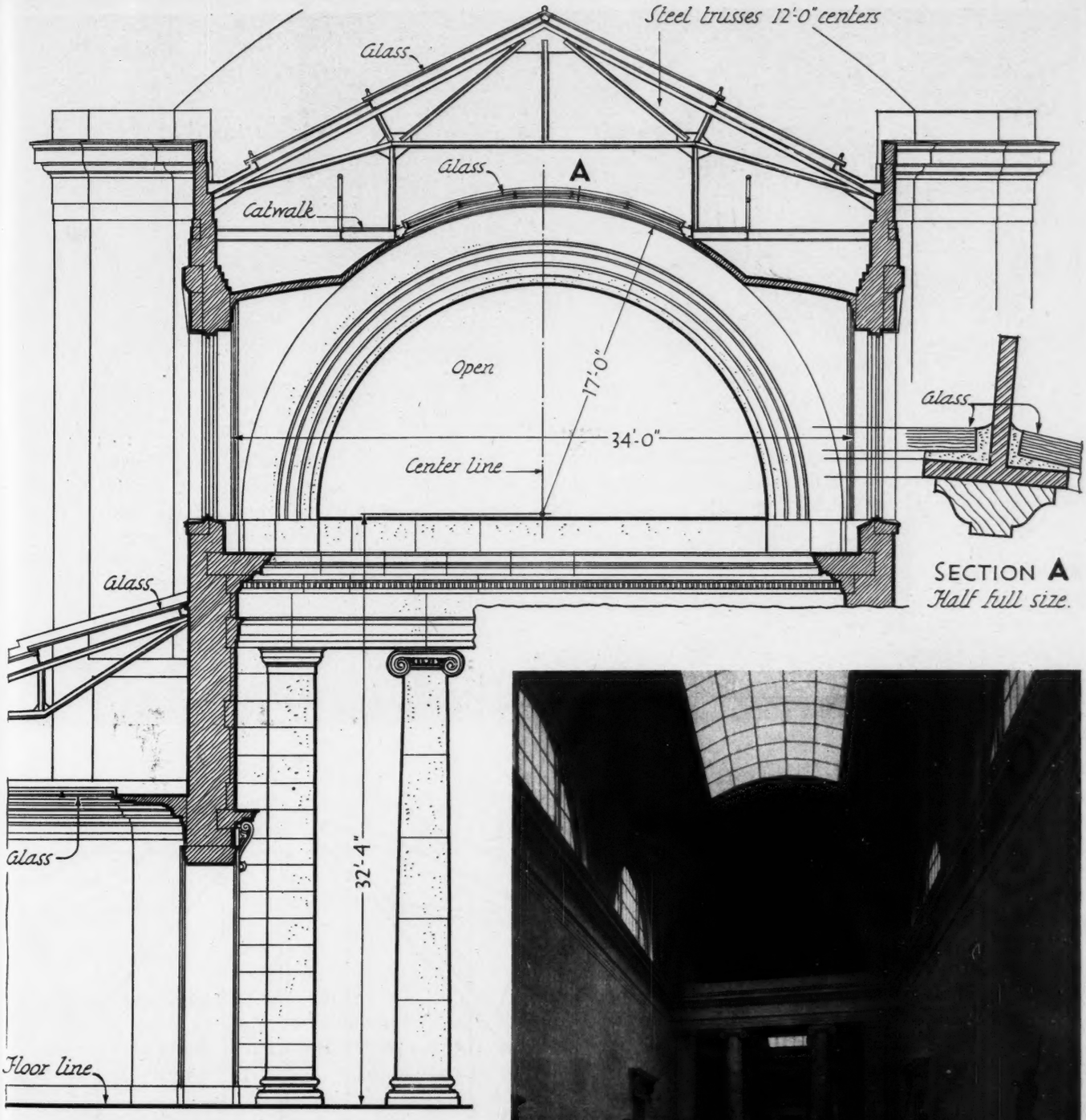
of the Louvre in Paris is well done in this manner. The sources of the light are concealed and in instances where the back wall of the room is far from the windows, supplementary cove lighting is used to furnish the necessary foot candles. In the center of some rooms, objects such as an urn on a high pedestal or a tall column displayed for archæological as well as æsthetic reasons house concealed light sources which illuminate the ceiling of the room.

The success of a buliding lighted only by the usual artificial light is problematical. A large, artificially-lighted building can be depressing and lacking in relaxation for the visitor. This type of lighting is actually only a substitute for natural light and because no windows are used it creates the unpleasant psychological effect of being walled-in. A small museum or perhaps some parts of a large one can be lighted in this manner, which does have redeeming features deserving of consideration. Artificial light is not subject to difficult control as are the varying types of daylight. This type of lighting permits imaginative and dramatic use of concealed, spot, and flood lighting, and is readily adaptable as a feature in the design of the interiors. The New York World's Fair in the coming year promises to demonstrate advanced technical and decorative efforts in the artificial illumination of exhibition buildings.

A new material which is being studied in connection with museum lighting is Polaroid, a film capable of controlling light vibrations to produce polarized light. This type of light has long been known in the laboratory but not until the invention of Polaroid has it been practical to obtain in units of large size. Polaroid has a special crystal alignment and appears to be similar to cellulose acetate. It can be used by itself or between laminations of glass. For museum purposes this material can be adapted to daylighting only when the varying conditions are minimized, and louvres or other devices are used to control the direction of the light rays. Its use in an artificially-lighted building already seems feasible, as recent experimentation has shown it to have great merit.

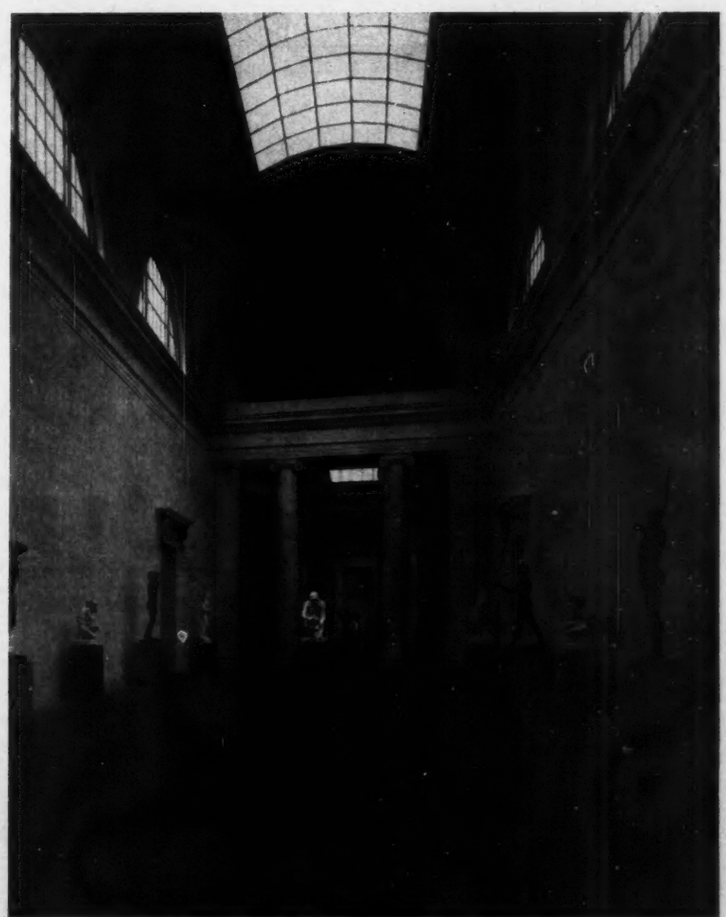
The advantages obtained with the use of Polaroid are the removal of glare from the transmitted light; the reduction of reflections to a minimum; and the appreciable enrichment of the colors in the paintings, for they are seen in their true tones when the disturbing glare is nullified. Sloping louvres also may be used below the sheet of Polaroid to control and direct the rays of the artificial light to the walls. Then, too, this material seems to lend itself remarkably well to the spot lighting method of illumination of paintings. If these worthy results can readily be obtained in practice, it seems reasonable to expect extensive use in future artificially lighted buildings.

Due to the complex factors to be studied: the type of exhibits, the varying light conditions, and the different lighting techniques, the subject of museum lighting is a large field of study in itself. In this there is room for improvement, for though each system of lighting has merit of some degree, it is usually not without fault. It remains for the architect and museum curator, with the technical assistance of the lighting engineer, to investigate recent contributions in this field, to assimilate the desirable qualities, and to adapt them according to the requirements of the gallery which then is under consideration.



SECTION **A**
Half full size.

GALLERY SECTION
Scale 1/8"=1'-0"

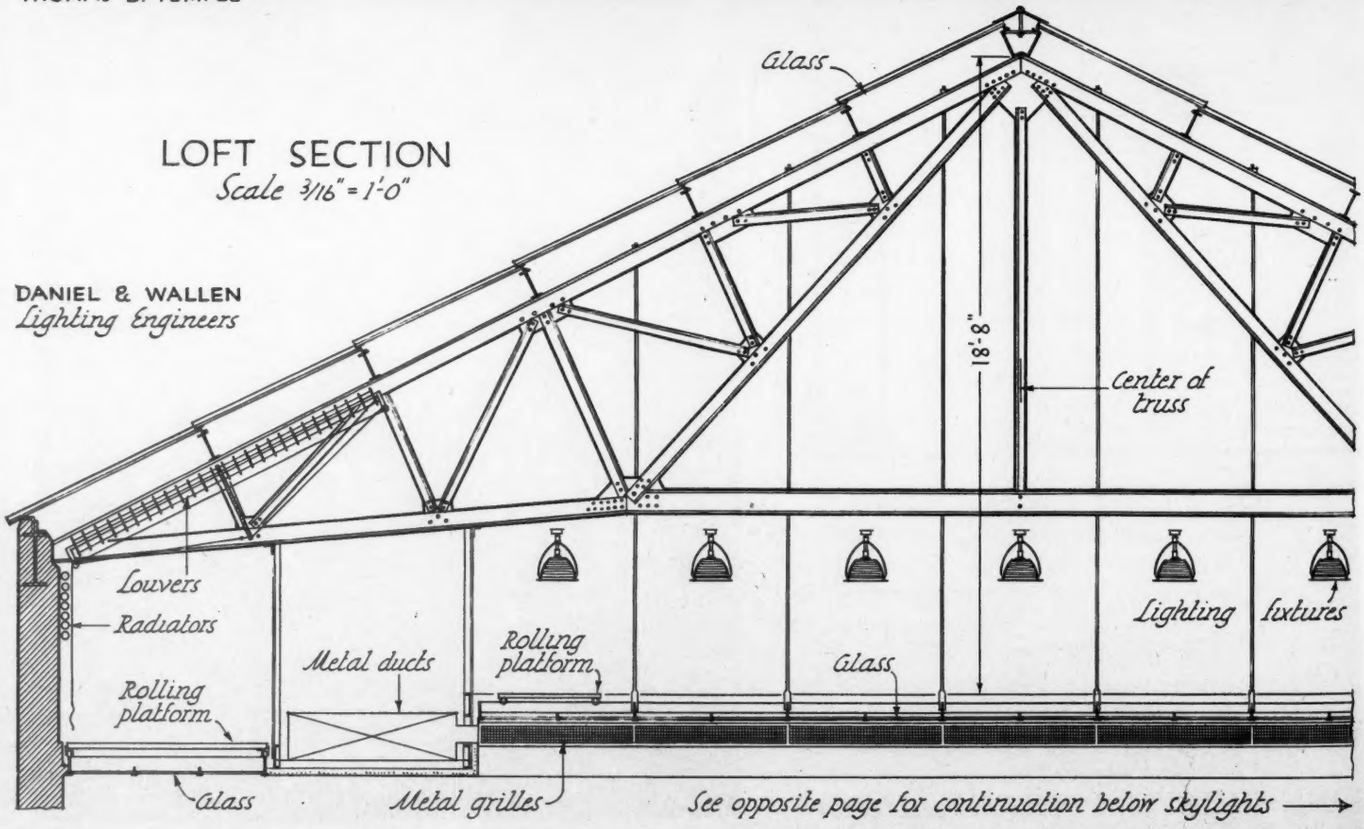


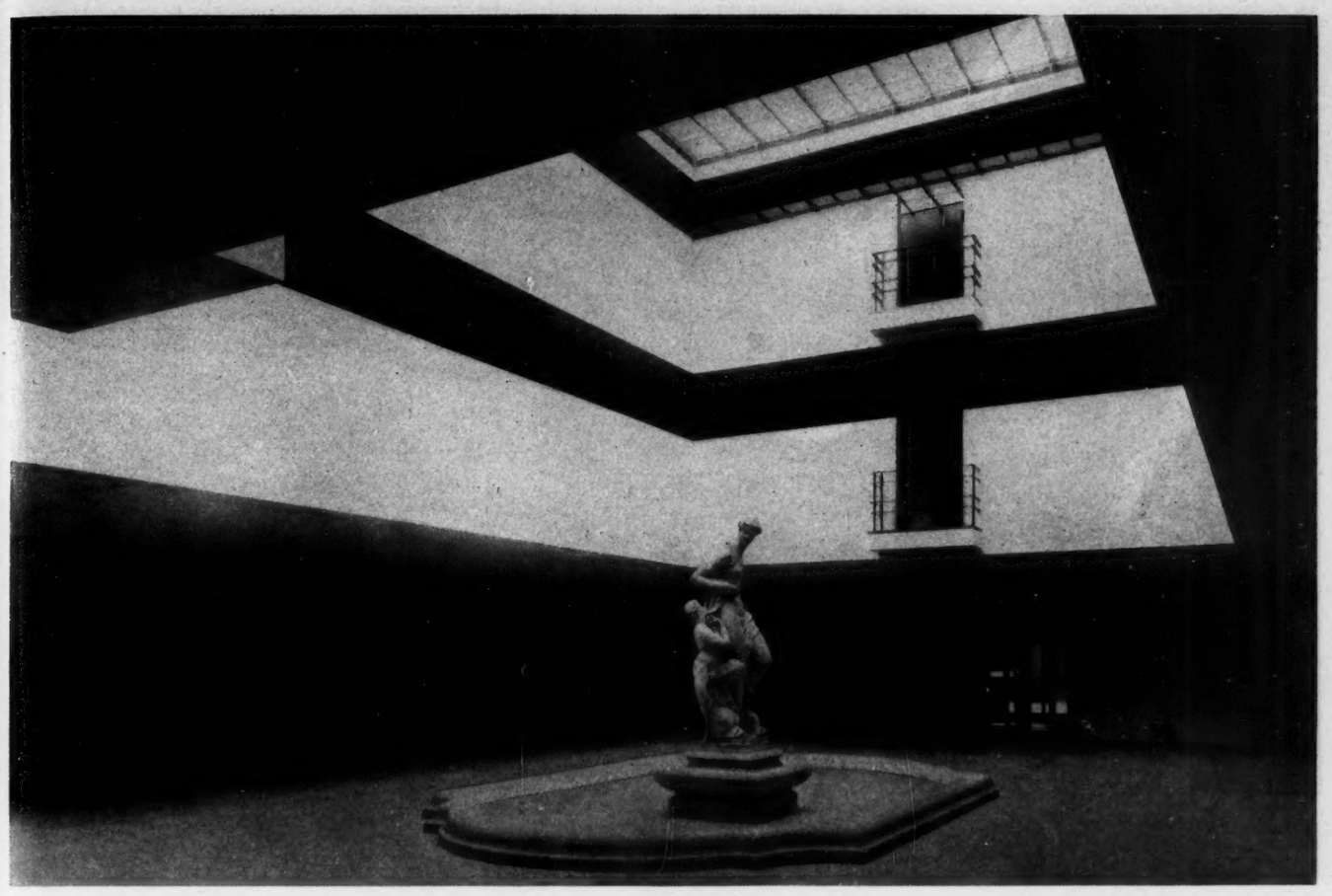
ROMAINE, WALKER & JENKINS
LONDON
JOHN RUSSELL POPE *Architects*

THOMAS B. TEMPLE

LOFT SECTION
Scale 3/16" = 1'-0"

DANIEL & WALLEN
Lighting Engineers





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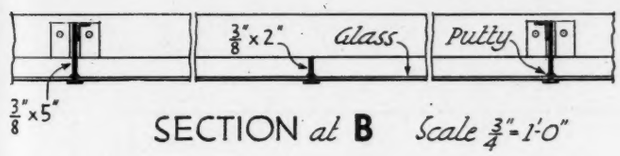

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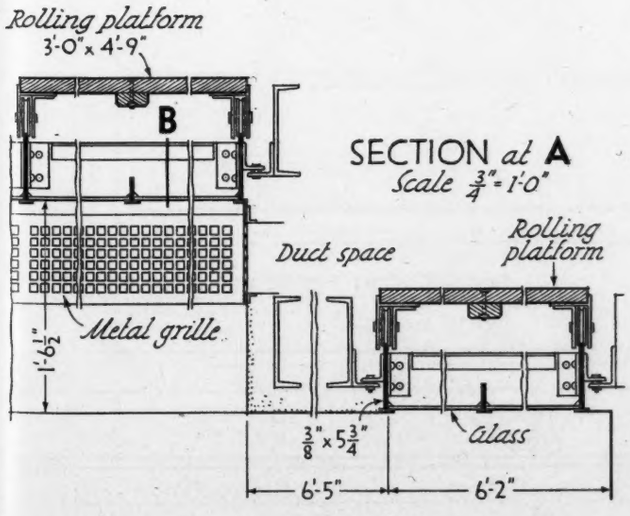

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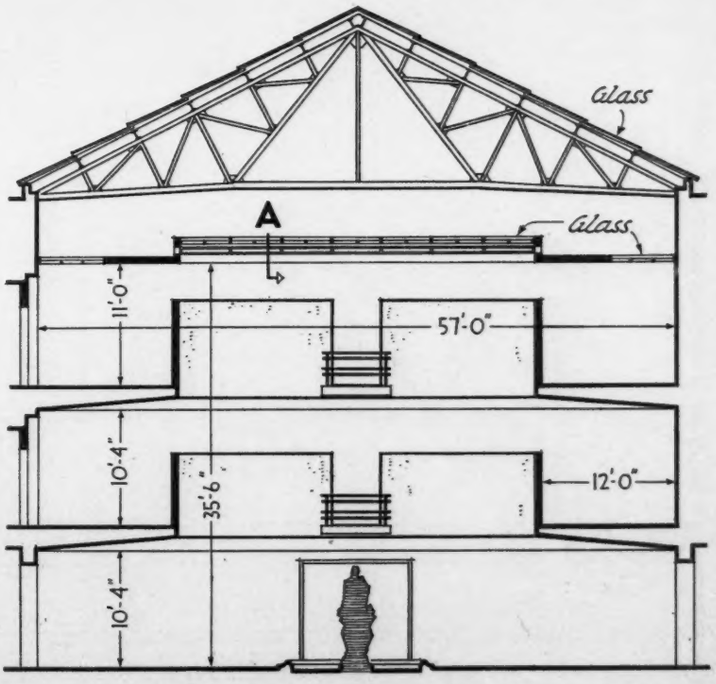
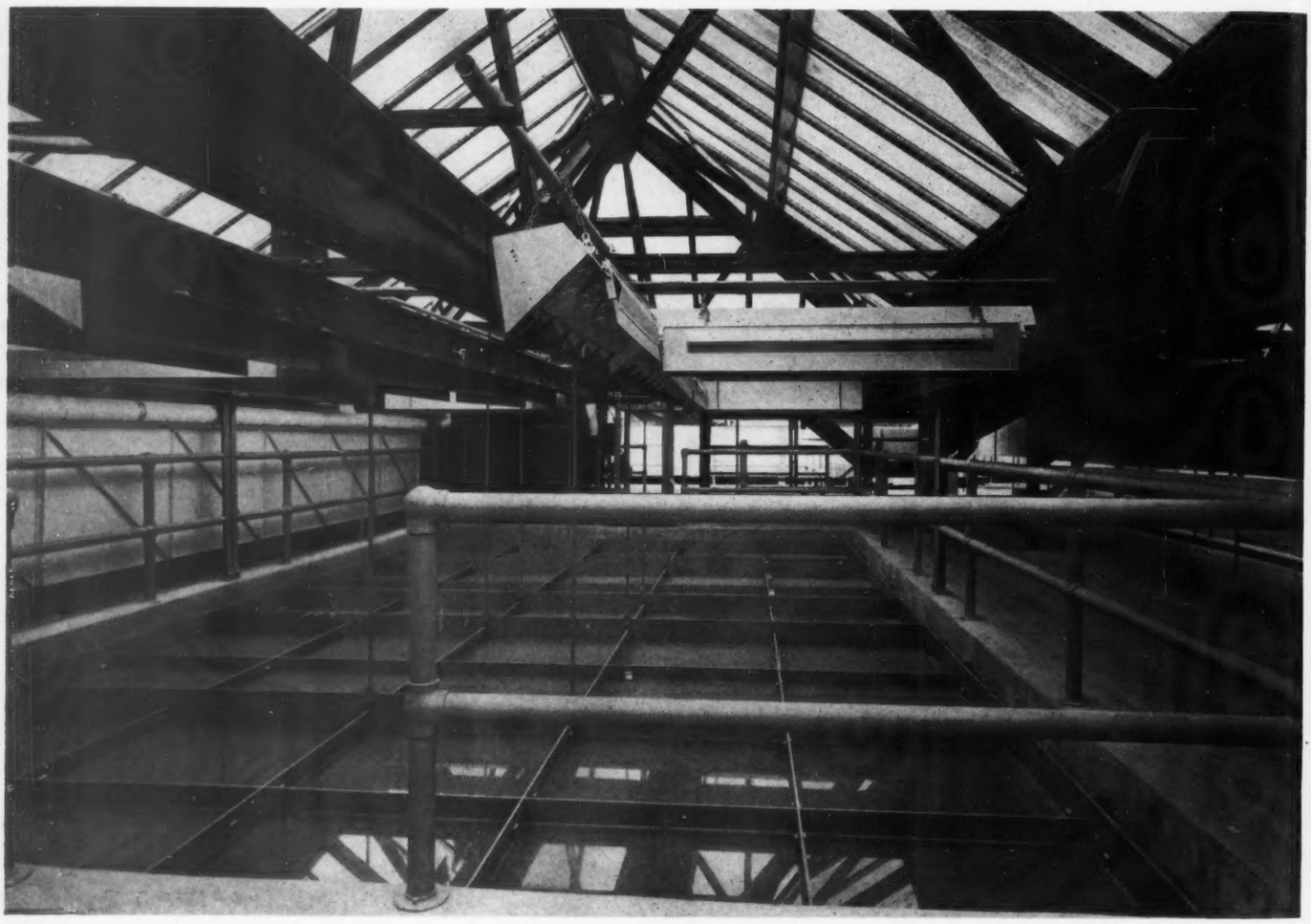
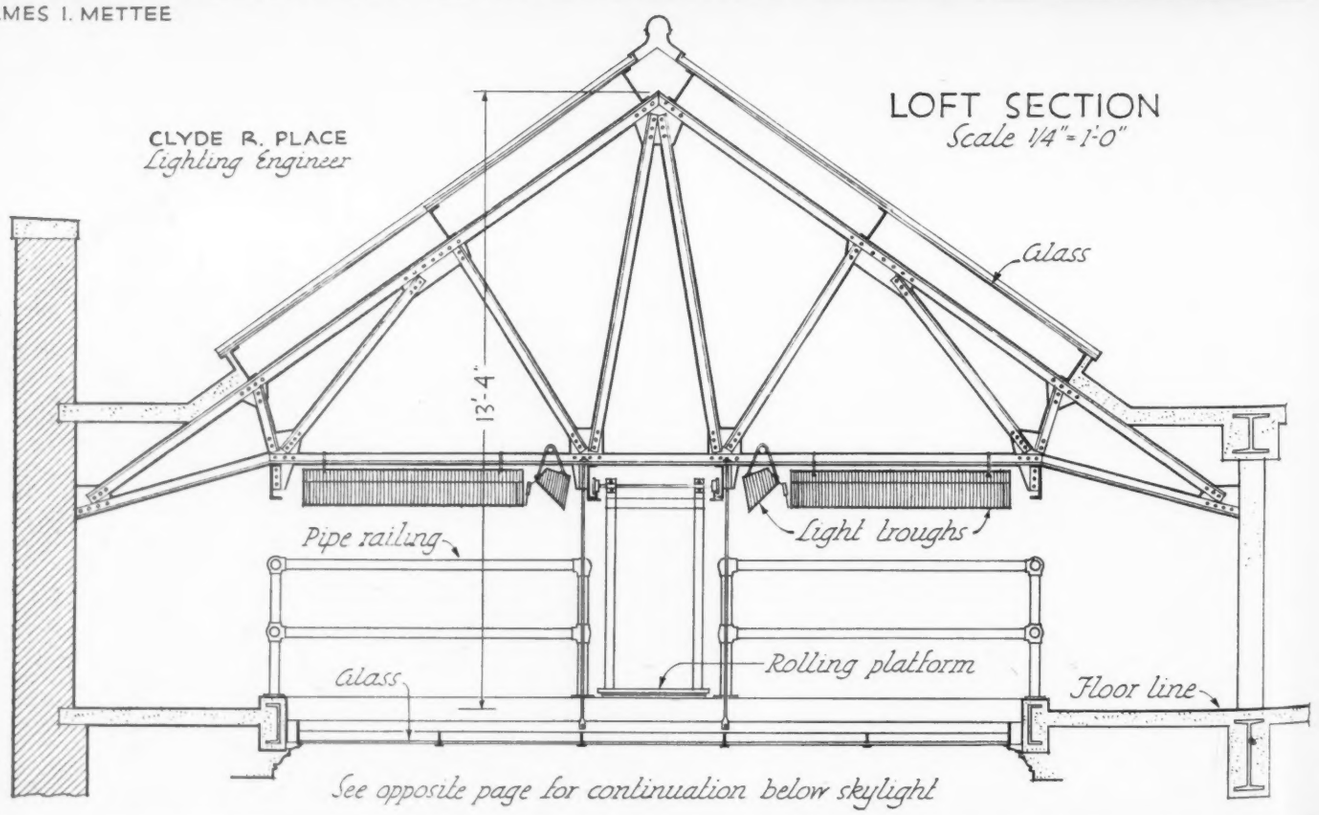


GALLERY SECTION
Scale 1/16"-1'-0"

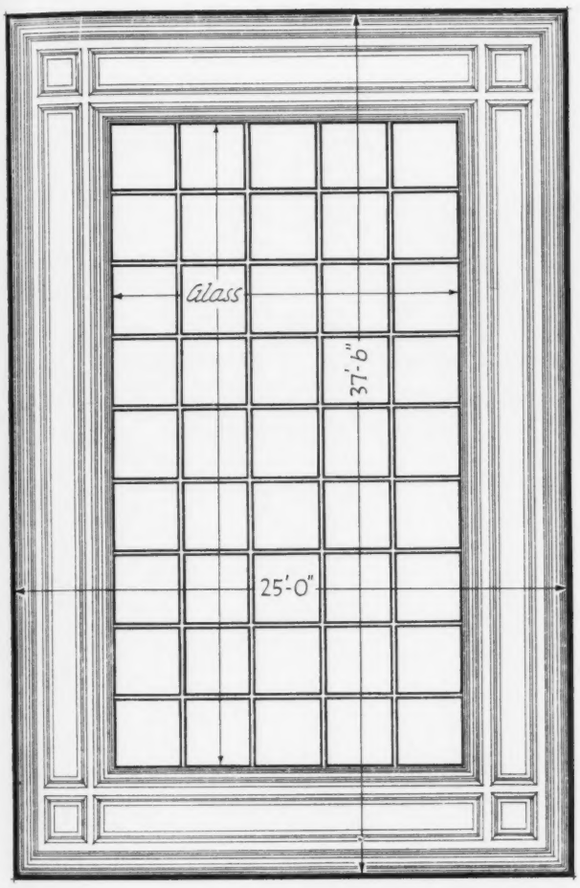
MORRIS & O'CONNOR *Architects*



HOLMES I. METTEE



See opposite page for continuation below skylight



CEILING PLAN
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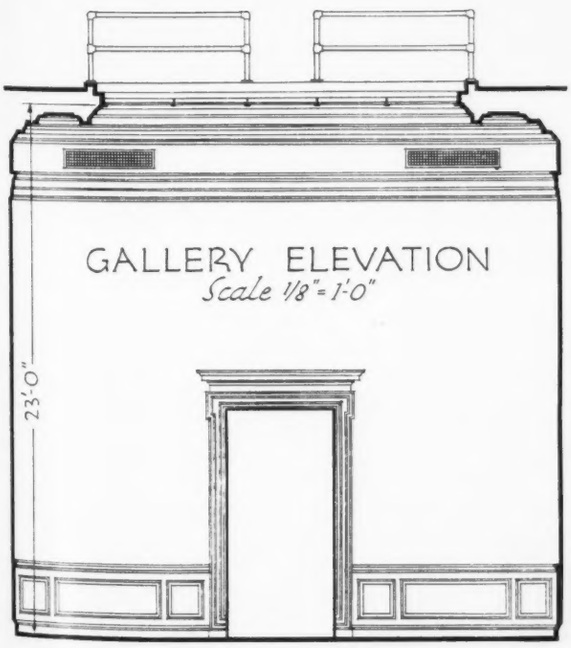
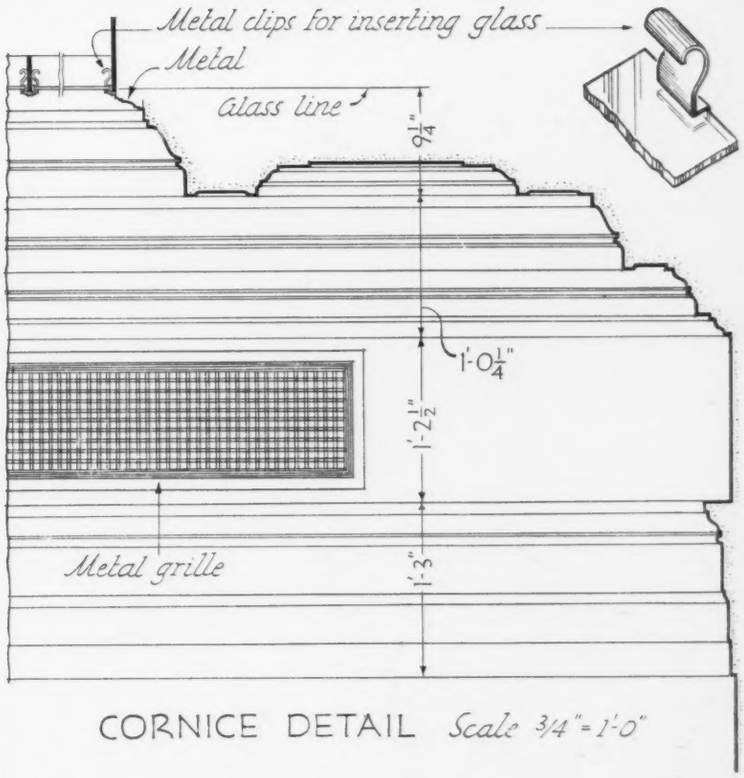


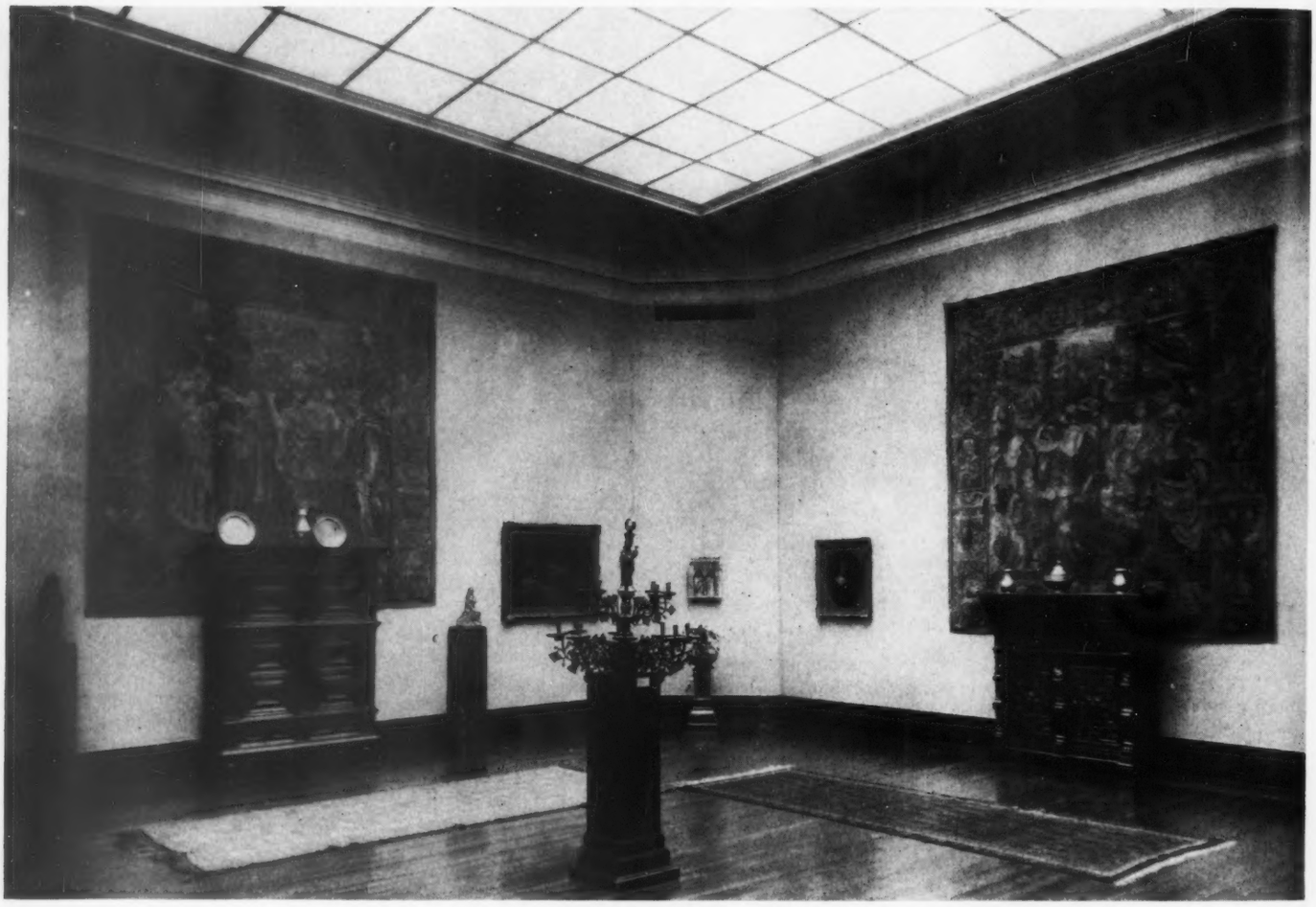
GALLERY ELEVATION
Scale 1/8"=1'-0"

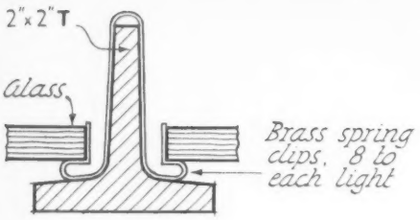


CORNICE DETAIL *Scale 3/4"=1'-0"*

HOLMES I. METTEE

JOHN RUSSELL POPE *Architect*





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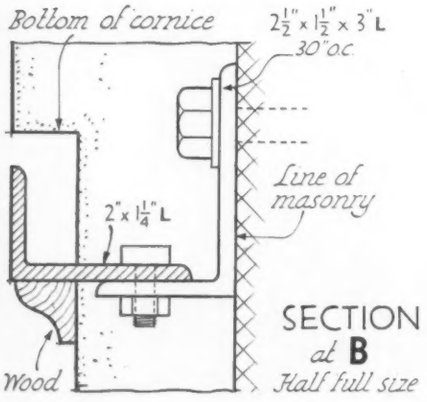
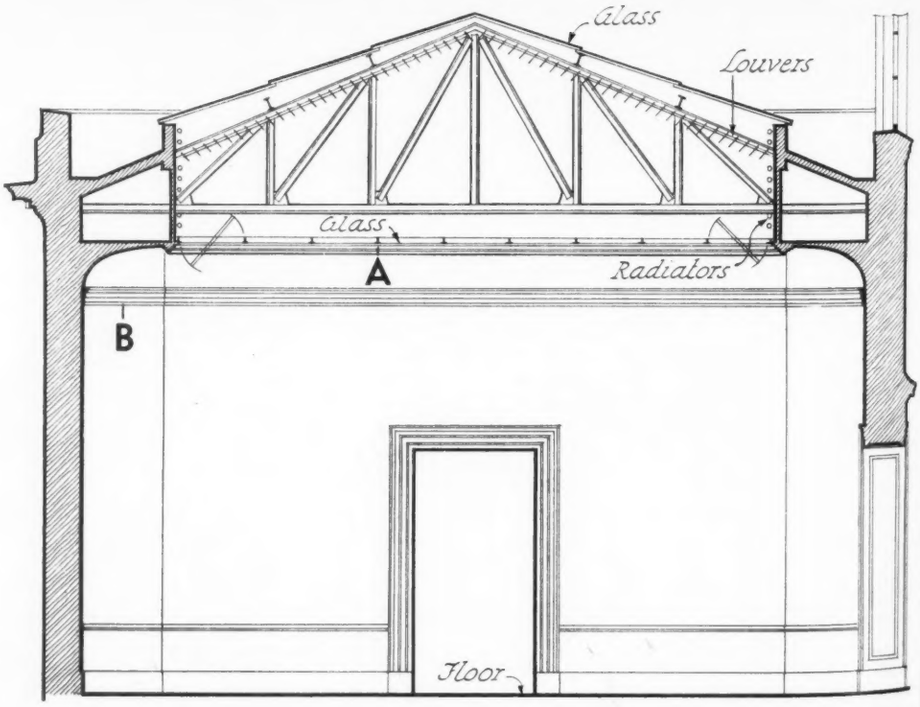


SECTION at **B**
Half full size



McKIM, MEAD & WHITE, *Architects*

TYPICAL SECTION
Scale 1/8"=1'-0"

PENCIL POINTS DATA SHEETS

Prepared by DON GRAF, B.S., M.Arch.

DISREGARD OF THE OBVIOUS

We submit as a typical gem of expository writing the following paragraph from the much-touted new New York Building Law. There are roughly 400 pages of similar material which required a period of several years to produce by the combined genius of a legion of politicians, building experts and hangers-on.

Various national agencies have made extensive studies of the high cost of building in this country. There are the costs of materials, of labor and of financing. We respectfully suggest that there are at least three other hidden wastes which are involved. In a year, the national total must be staggering.

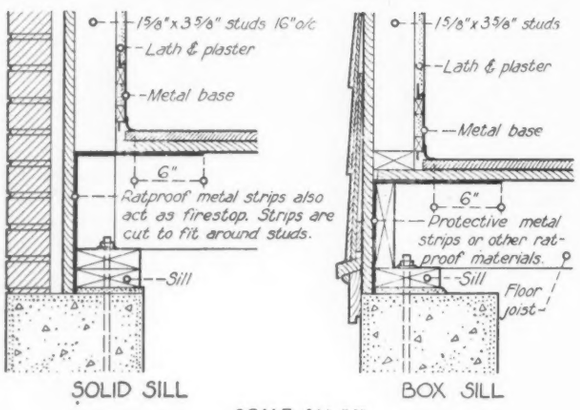
The difficulty of dealing with city building departments in order to get drawings approved is Item One. Second, the ridiculous and extravagant requirements of many city building codes. Third, we have the cost of translating such stream-lined English as the following:

QUOTE: The provisions of this article shall apply only to converted dwellings, both class A and class B whether heretofore or hereafter converted, and whether or not a certificate of occupancy for such converted use has been heretofore issued, except that every such dwelling heretofore converted in accordance with the requirements of or plans filed with and approved by the bureau of buildings or the department charged with the enforcement of the tenement house law, and every such converted dwelling heretofore converted to a Class B multiple dwelling, and every such dwelling heretofore converted not exceeding three stories in height and not occupied by more than two families on any one floor or more than three families in all, if such dwelling complies with this section and sections one hundred and seventy-two-a, one hundred and seventy-six, one hundred and seventy-seven, one hundred and eighty-five, one hundred and eighty-seven, one hundred and eighty-eight, subdivisions two and three of section one hundred and eighty-nine, sections one hundred and ninety, one hundred and ninety-two, two hundred, and section two hundred and one of this article, shall not be required to comply with any other section of

RAT PROOFING FRAME BUILDINGS

Index No. **F 5 f** CONSTRUCTION

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

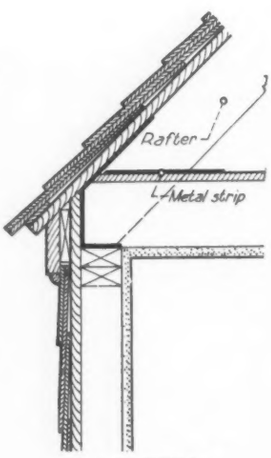


SOLID SILL BOX SILL

SCALE ¾"=1'0"

SET 14 SEP 1938

The following precautions, in addition to usual good construction, should be employed to render a building ratproof. *Cellar steps*—should be of open type. *Hollow walls above cellar*—must be protected from invasion from cellar, intermediate floors or attic. (See drawings herewith.) *Pipe lines*—should have ratproof metal collars. *Decorative grilles*—should have no openings greater than ½" and if openings exceed this amount, a metal screen should be installed behind grille.



EAVE DETAIL

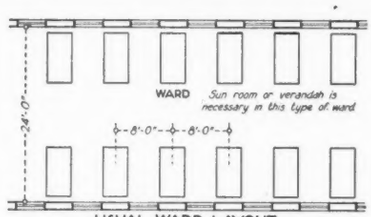
Rats require large and constant amounts of food as well as quiet and well-protected places for hiding and breeding. Interfere with these requirements and the rats' existence becomes perilous. The elimination of rat hiding places exposes the animals to the attack of man and domestic cats and dogs.

Reference: See Supplement No. 131 to the Public Health Reports entitled "The Rat and Ratproof Construction of Buildings," for sale by the Superintendent of Documents, Washington, D. C., 15¢.

BASIC WARD LAYOUTS

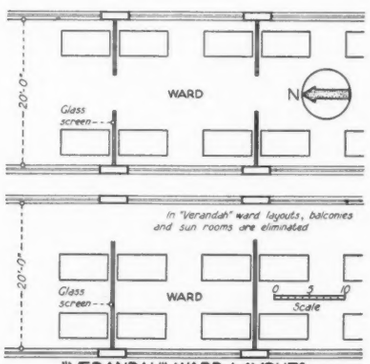
Index No. **D 15 a** PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF



USUAL WARD LAYOUT

Patients so placed, receive a minimum of sunshine on their bodies and a scanty maximum on their feet. Only one bed receives partial insolation at A.M. or P.M.



"VERANDAH" WARD LAYOUTS

Patients have a better outlook and receive complete insolation at A.M. or P.M. Supervision is not interfered with. Slightly higher cost of maintaining the necessary minimum temperature.

SET 14 SEP 1938

USUAL WARD LAYOUT. In this type the long axis of the ward runs north and south with narrow windows and a large amount of wall surface. The percentage of light in this wall is only about 30% so that a sunroom is a necessary addition.

VERANDAH WARD LAYOUT. Hospital wards with the beds placed parallel to the long axis of the ward were first developed in Copenhagen. The percentage of light in this wall is 66%. The long sliding windows may be swung back giving a complete open-air effect. The width of the ward is reduced and this decrease in span for floors and roofs will offset the 3% increase in the total cube necessitated by the extra length. The amount of sunshine will average fully 3 times as much in the verandah ward as in the older type. Balconies are eliminated which would shade the windows of lower floors. Supervision of the wards is no more difficult since the upper panels of the partitions are glazed. The patient has the advantage of being in a cubicle with only 3 other people instead of in an open ward exposed to the gaze of 19 other patients.

Material in part thru courtesy of Architects' Journal.

this article. *(Whew!)* All of the provisions of articles one, two, eight, nine, ten and eleven, and sections twenty-seven, twenty-eight, thirty-six, forty, fifty-six, fifty-seven, fifty-eight, fifty-nine, subdivision two of section sixty-two, seventy-eight, eighty, eighty-one, eighty-two and eighty-three of this chapter shall apply to all converted dwellings; and no other sections or articles of this chapter, except as in this article specifically provided, shall apply to such dwellings. Every alteration required by the provisions of this article in dwellings heretofore converted, whether or not a certificate of occupancy for such converted use has been heretofore issued, shall be made on or before April eighteenth, nineteen hundred thirty-three and shall not be required to be made before said date unless the department charged with the enforcement of this chapter shall direct that any such alteration shall be made prior to said date in order to safeguard the life or health of any occupant of such dwelling and in case such department shall so direct such alteration shall be made on or before the date specified in such direction. UNQUOTE.

How Cicero or the proverbial Philadelphia lawyer might envy that first sentence!

* * * *

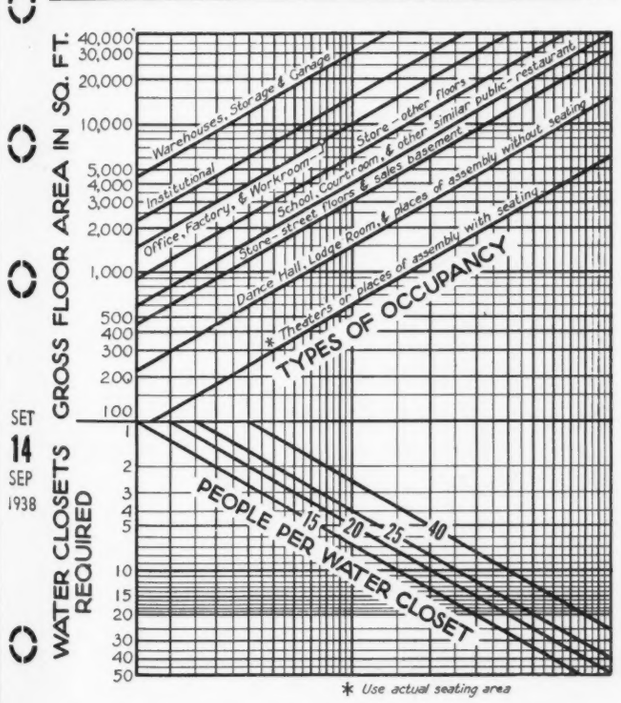
DATA SHEET DOINGS. New issues of manufacturers' material that you should have in your *Data Sheet Library* are the *Data Sheets* sponsored by the Elkay Manufacturing Company, Chicago, on high quality stainless steel sinks and cabinet tops; A set of 6 *Data Sheets* describing kitchen planning principles, from the Mutschler Brothers Company, Nappanee, Ind.; and the Arkansas Soft Pine Bureau of Little Rock, Arkansas, will be glad to send you a set of 8 *Data Sheets* in which this soft-textured lumber is described in architectural language that you can understand without having to make a life study of the lumber business.

Sometime when you have nothing to do, just try to find some dope on hydraulic elevators in any of the standard architectural reference books. The *Data Sheets* here and now claim any reward that has been posted for making such information available. You can get a set of 6 *Data Sheets* from the Rotary Lift Company, Memphis, Tennessee, telling you how much space to allow, how to construct the pit and all the other things that you will want to know when planning for freight-passenger elevators, sidewalk elevators or dumbwaiters.

TO DETERMINE FIXTURES FROM FLOOR AREA

Index No. **E1h** MECHANICAL

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF



* Use actual seating area

SET 14 SEP 1938

First—read across from floor area to curve for type of building.

Second—at intersection read down to curve for number of persons per toilet as specified in the local code or as judged desirable. (15 persons per toilet represents generous conditions.)

Third—from this intersection read to the left for the number of water closets required.

Fourth—determine the probable sex proportion and divide the number of toilets found, in a suitable ratio, remembering that urinals in the men's toilet room augment the facilities offered by the water closets and makes relatively fewer water closets necessary for men than for women. For schools, allow 1 toilet to 25 girls, and 1 toilet to 40 boys.

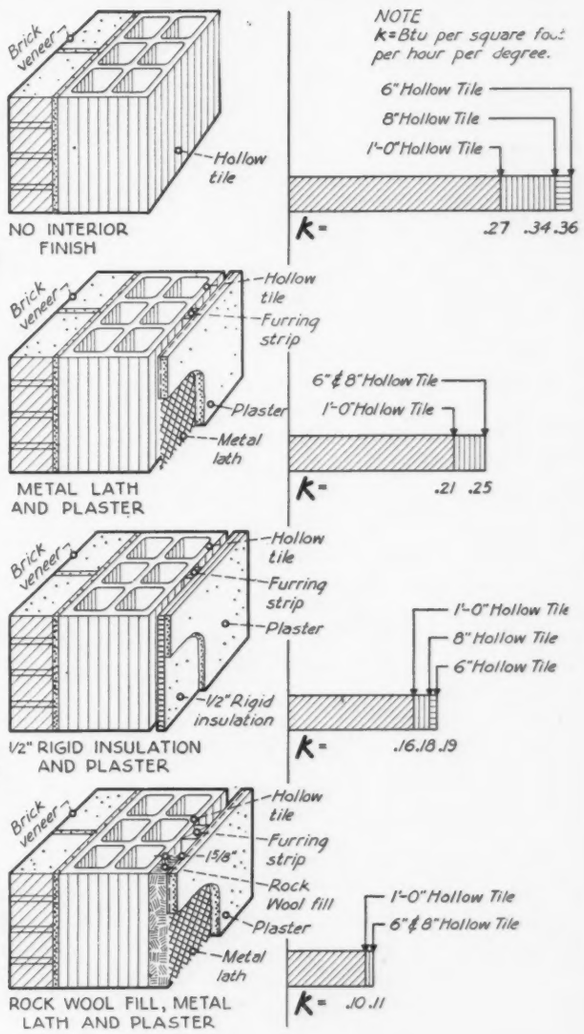
Fifth—apportion urinals and lavatories as follows:

Type of Building	*Urinals to 1 Closet*	*Lavatories to 1 Closet*
Theaters	1½	½ to 1
Office Buildings	½ to 1	1 to 1½
Schools (boys' room)	1	1
Schools (girls' room)	—	½
Other Buildings	1	½ to 2

HEAT LOSS COEFFICIENTS MASONRY WALLS

Index No. **E21** MECHANICAL

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF



SET 14 SEP 1938

FOUR RECENT PRINTS

BY MORRIS HENRY HOBBS

The mastery of an exacting technique attained by Morris Henry Hobbs, Cleveland architect, in his hobby of print making is demonstrated by four of his most recent prints. The small etching below, reproduced at the original size, depicts with skilled clarity an ancient portal in the Vieux Carre of the New Orleans French Quarter, long popular with artists

The interesting variety of wares and the mysterious interior of "The Little Shop" kept by a crone seen emerging from the deep shadows provided another subject for Hobbs' New Orleans studies, which lend a flavor of age even to an obtrusive traffic signal on the sidewalk

In "Clothes Pole Alley," New Orleans, was found this variety of architectural forms with all the marks of a long and hard existence, interpreted by Hobbs in one of his most distinguished drypoints. It is reproduced here at the original size and shows his artistic ability

The grace and breath-taking activity of a yachting scene imparts special charm to this etching and aquatint by Hobbs, which he titles "Dusting Up"

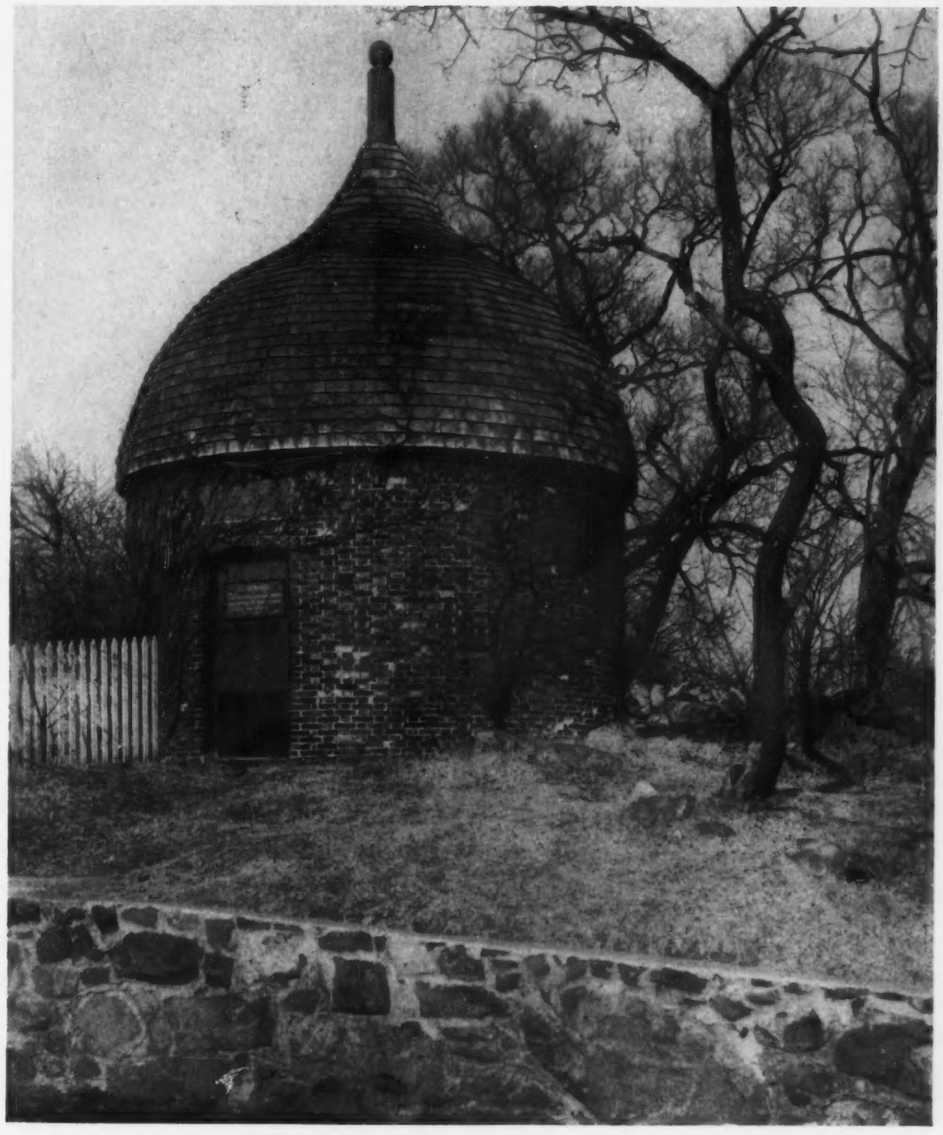
THE MONOGRAPH SERIES

Records of Early American Architecture

Edited by RUSSELL F. WHITEHEAD, A. I. A.

Measured Drawings by FRANK CHOUTEAU BROWN, A. I. A., *Associate Editor*
Photographs by ARTHUR C. HASKELL, *Architectural Photographer*

Volume XXIV · Number 4



"POWDER HOUSE"—1755—FERRY ROAD, MARBLEHEAD, MASS.

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(*Measured Drawing—Volume XX, No. 3, Page 134*)
CAPT. ASA HOOPER HOUSE, 5 WASHINGTON ST., MARBLEHEAD, MASS.

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Old Marblehead, Massachusetts

by FRANK CHOUTEAU BROWN, A. I. A.

THE early growth of the town was not very rapid. By 1674 the Town records had listed 114 householders; while in Town meeting that same year it was voted that "all these fifteen or sixteen houses built in Marblehead before ye year 1660, shall be allowed one cowes common and a halfe." Most of the "Commons" set apart as public land owned in common by the community in the earlier settled townships of New England were intended either for grazing land, for the use of the cattle of the townspeople, or as a "training field" for the regular meetings of its "train band," the first colonial militia.

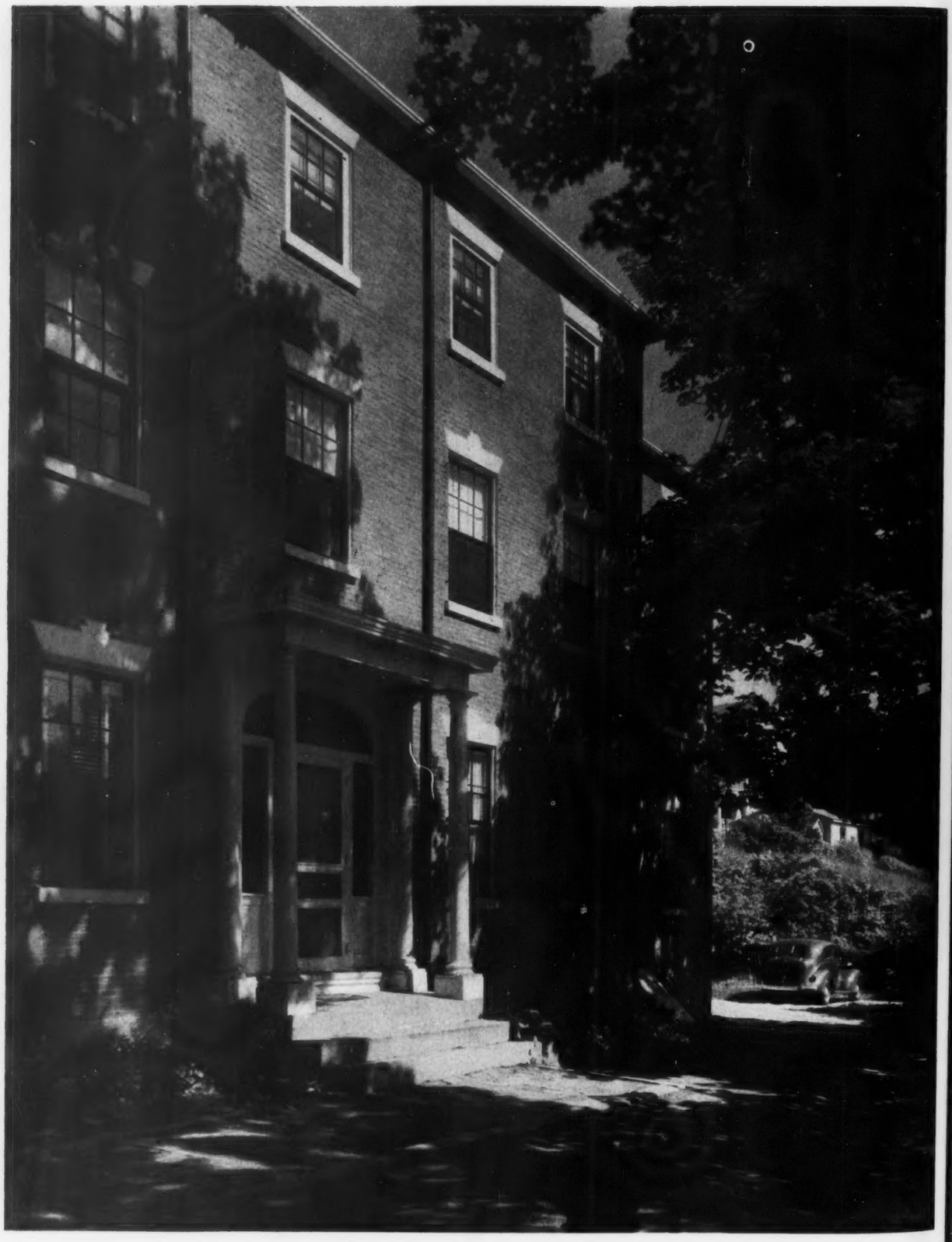
Besides its "Training Field," the town early allotted "the Neck" for general use as "Cow Commons." The "Neck" was a rocky peninsula, almost entirely detached from the mainland, except at low tide, when a shallow sand bar from its westernmost end formed the inner limits of the large harbor. A slight obstruction across this natural causeway kept the cattle confined to the grazing area, even at low water. It was this same Neck—which was practically an island at high tide—that gave protection to the larger anchorage that is now known as "the Harbor,"—although in the first hundred years of its settlement, the fishermen and small vessels using the town facilities took advantage of the better protected "Little Harbor," a small bay just back of the promontory crowned by Fort Sewall, at the very foot of "Burying Hill," which was the site of the first settlement.

The importance of this harbor to the early settlement would be indicated by the several forts that were erected for its protection and defence at various times. Most important of these is Fort Sewall, built on the mainland side of the harbor entrance. This position was first fortified in very early times. During King Philip's war, which began in 1675 and continued for three years, this fort and its three large cannon were placed in order, and it has been continued and improved from time to time up nearly to the present day. The structure now to be seen dates from about 1742, when it was enlarged and reconstructed under Sir Harry Frankland. This position was garrisoned in three important wars and, although again somewhat rebuilt and remodelled in 1864, it still retains the older magazine, along with several old gun emplacements and other features.

Another old fort, known as Fort Washington, was constructed and in use during the Revolution and the War of 1812, on the high rocky bluff overlooking Orne Street, from near the "Old Burying Hill," although, along with an embankment that at one time dominated the causeway, at the southern end of the main harbor, it has long since disappeared. One other earthwork fortification could, until within the last dozen years, be plainly traced at Naugus Head—the tip of the Cape nearest Salem Harbor. The dirt roadway around that headland that served a group of summer cottages cut right through the embankment in two places, and its main outlines were still easily traced, despite the location of some of the houses across and upon its outer slopes.

Along with this group might be mentioned the old "Powder House," a fine example of the town magazine of the time, that was built by vote of the town, in 1755, at the outbreak of the French and Indian War, and continued in use through the Revolution and the War of 1812. It is a handsome example of brickwork, laid in Flemish bond, circular in plan and with a brick-domed top, covered by its "ogee" shingled roof, located on what used to be known as "the Ferry Road." It is about the earliest and best example of a building of this type remaining within the Commonwealth; although the "Gun House," built to house the artillery of the local regiment during the War of 1812, is probably more unique. In its simplicity this unusual building might almost suggest a post-Colonial precedent for the modern garage, if to be built of brick! The principal walls are again laid in an early bond.

This records an unusual number of public buildings, of both age and historic association, still preserved in one small township,—except that no specific mention



ROBIE HOUSE—1729—7 PEARL STREET, MARBLEHEAD, MASSACHUSETTS

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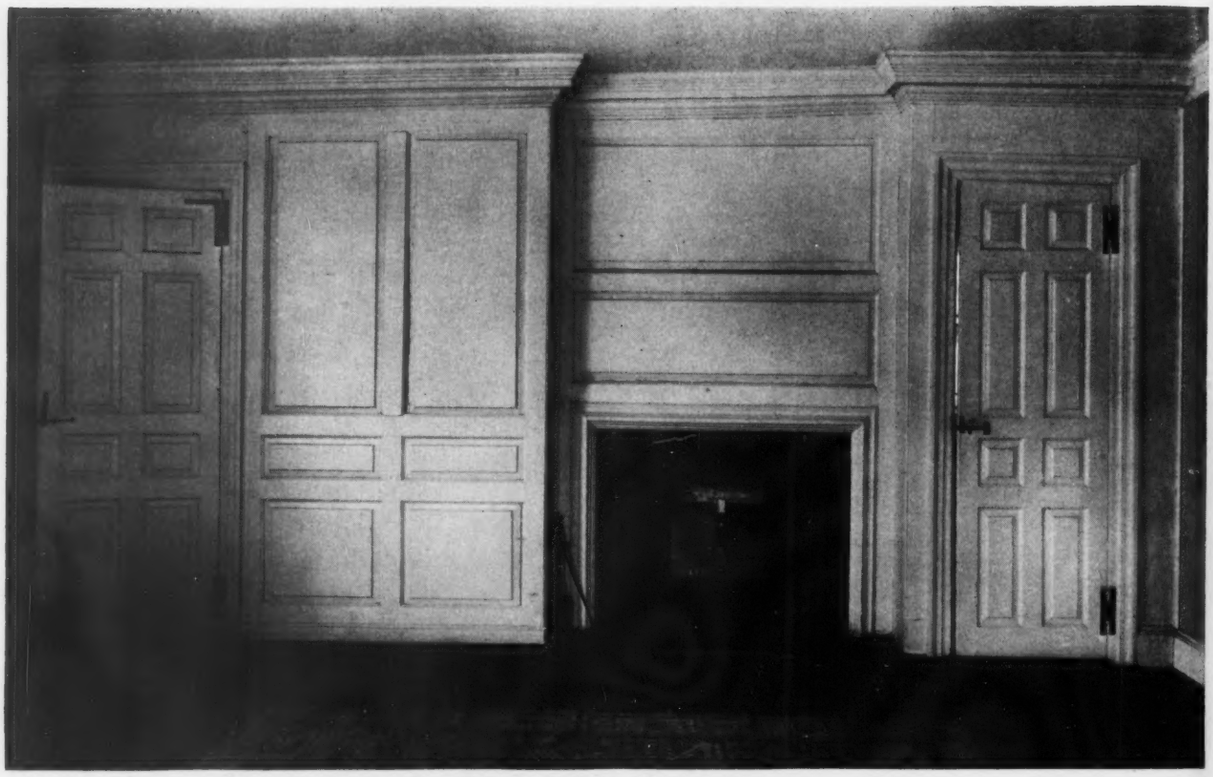
has yet been made of the old "Town House" (illustrated in Vol. XXIV, No. 2), which was built in 1727 exclusively for that purpose and continued in use until 1877, when Abbot Hall, an ugly brick structure of Victorian type, was built on the old "Training Field" and given to the townspeople for a meeting place. The old Town House formerly had a Market under it on the ground floor level—as was so commonly the case in many sections of old England—which also explains its high basement, now occupied by the local constabulary, to which it gives dignified shelter.

THE AZOR ORNE HOUSE, ORNE STREET, MARBLEHEAD, MASSACHUSETTS

If we glance back over the early records of the colonies, it will be realized that there must have been more than a merely spiritual reason for all the early settlement groups to have so continually evolved about their preacher's leadership. He must have possessed temporal as well as spiritual power to have been able to lead his flock successfully into this new world wilderness, and bring them to a permanent fruition. And so it would seem that the high repute attained by Parson John Barnard in this community was based rather upon his business acumen in finding a successful economic solution for his pastorate from those conditions amongst which he had found them than upon his eminence as a spiritual leader. For Marblehead—in common with most other smaller townships—was then desperately contending for its prosperity and future livelihood against capitalistic control, in the first instance imposed by its English sponsors, but later furthered both by the governmental and merchandising functions common to the period. So long as the residents of this little fishing community were content to remain an adjunct to the larger and more prosperous trading port of nearby Salem; so long as they were content to endure the privations inherent in the fisherman's calling, and allow the merchants of Salem to carry their product to the larger cities where it was most in demand, they must also expect them to obtain the major part of the profits. And the more especially when they were accustomed to accept, locally, other merchandise in exchange for their fish; while these middlemen mer-



ROOM WITH PANELED END

ROOM WITH PANELED END
THE ORNE HOUSE, ORNE STREET, MARBLEHEAD, MASSACHUSETTS

[150]

chants took to themselves not only the ample benefits of coined currency payments for the fish, but also exacted metal money payment for the costs of its carriage to market!

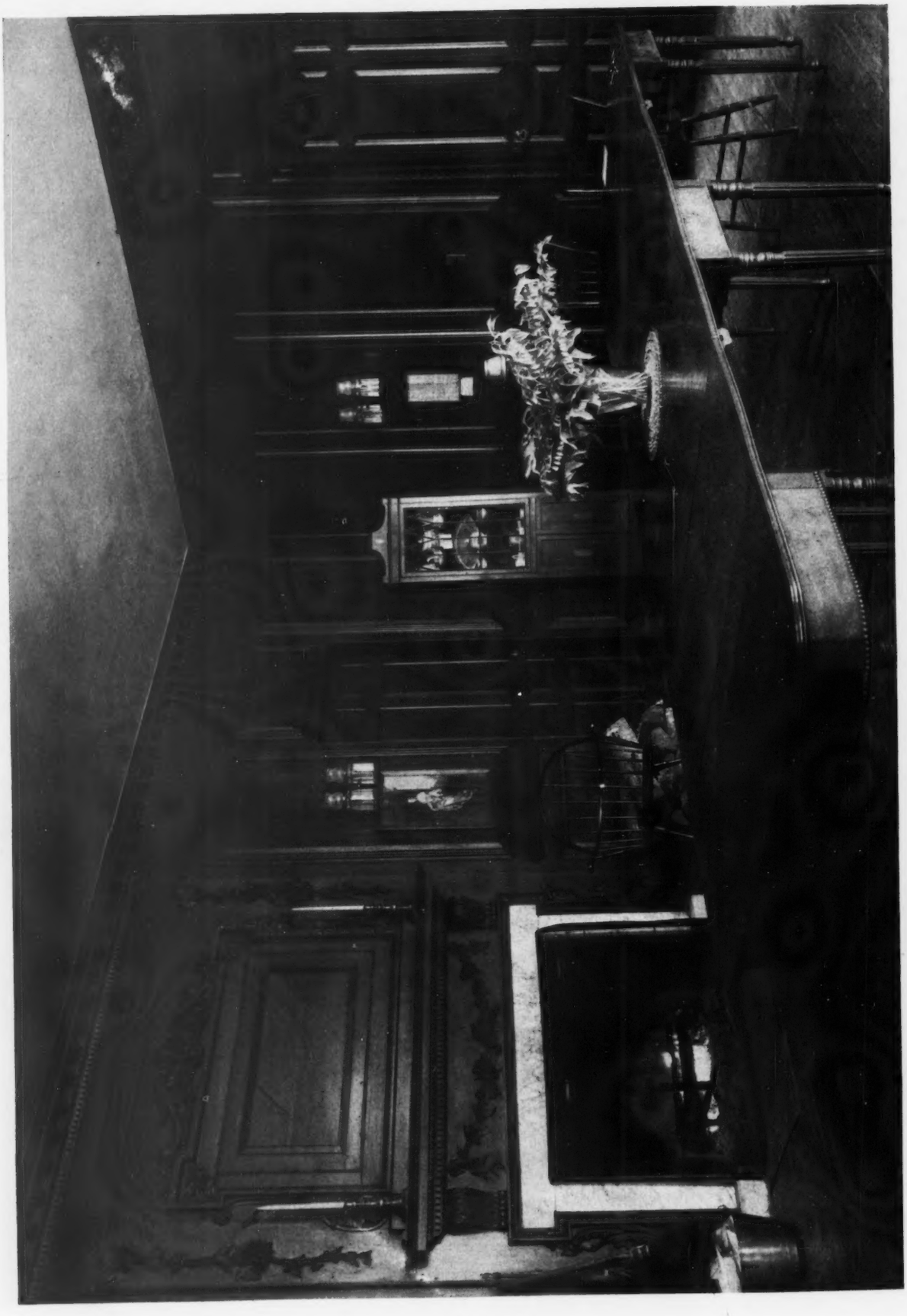
And it was this problem that Parson Barnard solved by persuading the Marbleheaders to convey their own fish to market, and so themselves profit both from the savings made in its transport and the currency payments. It was shortly after this that the town entered upon its new prosperity and period of more pretentious building. And, at once, some of the new three story dwellings—including probably the Robie house, of brick, built about 1729—began to demonstrate this new influx of wealth. And from then on, as in the other houses already illustrated, did the architecture of the town express the change in its manners of living, culminating finally in the Lee Mansion, of 1768.

Some further evidence of its dignified detail, furnishing, and decoration appears on these pages, including particularly the fine mantels, and the unusual painted wall coverings executed in gray monotone and white, in the classical fashion of the time, that extend over the walls of the two-storied main hall, and the two principal rooms upon the second floor. Obviously, all of the panels originally must have been painted to fit the spaces between doors and window trim, and extending from dado cap to cornice facia.

The Jeremiah Lee Mansion is, perhaps, almost the best New England example of that type of "Colonial" architecture that might be most correctly termed "Georgian,"—a word much misused! In old England it usually refers to a structure of similar design, but generally built of either brick or stone. In America, brick was also used generally for dwellings of this kind in the South, but in the New England colonies—where wood was always the favored material—it was sometimes, as in this present instance, employed so as to suggest, or rather to simulate, the formal stone coursing of England—as in the regions around Bath—for a dwelling of this pretentious kind.

So the use of wooden boards, with both horizontal and perpendicular grooves, disposed to suggest the

FIREPLACE AND PANELING SECOND FLOOR
JEREMIAH LEE MANSION—1768—MARBLEHEAD, MASSACHUSETTS



BANQUET ROOM
JEREMIAH LEE MANSION—1768—BANK SQUARE, MARBLEHEAD, MASSACHUSETTS

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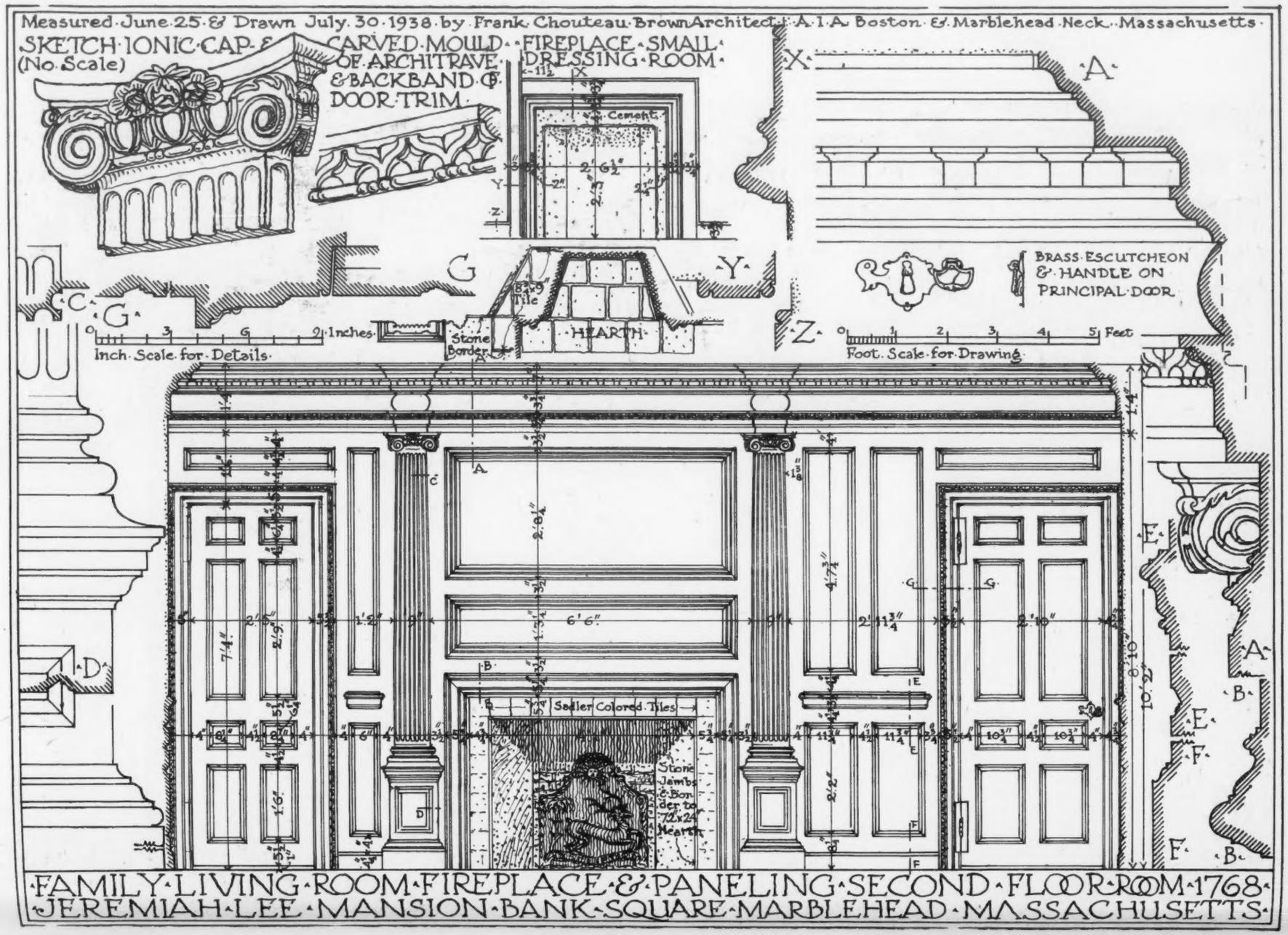
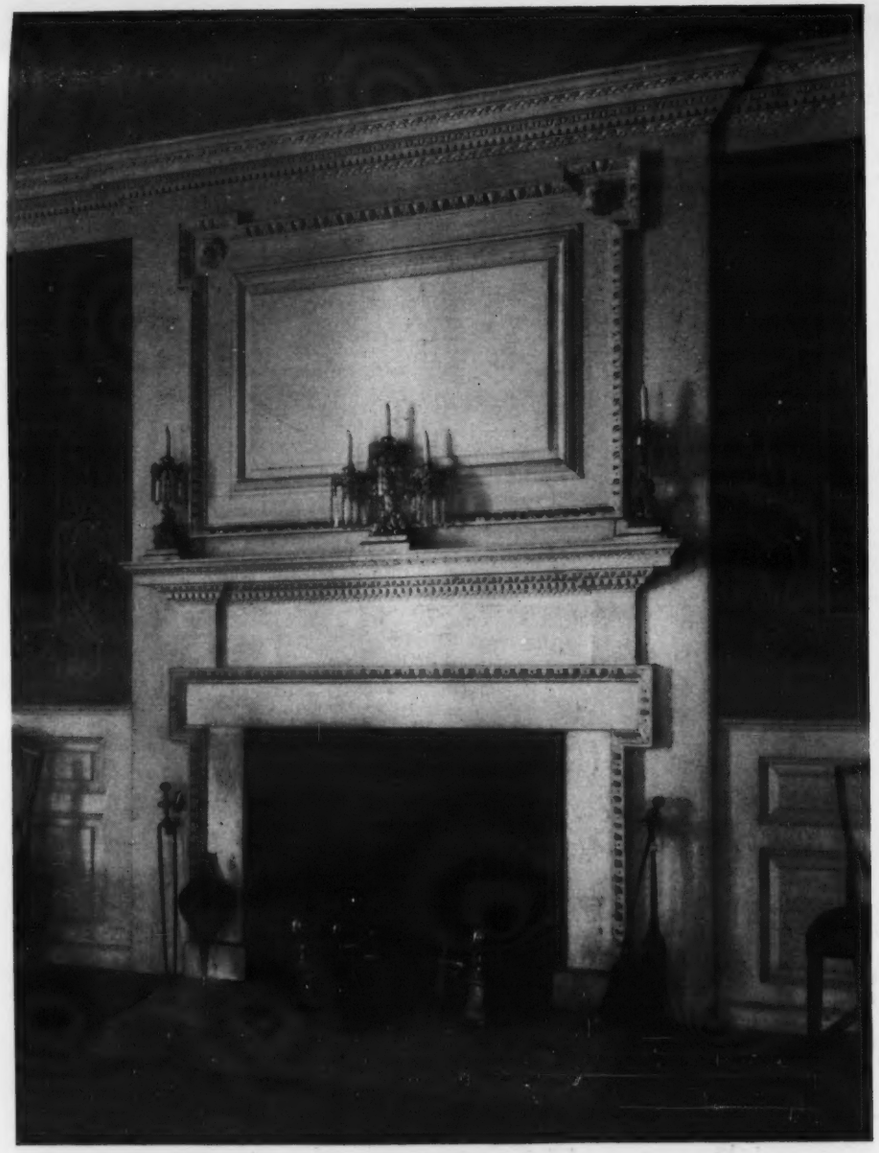
Banquet Room
JEREMIAH LEE MANSION—1768—BANK SQUARE, MARBLEHEAD, MASSACHUSETTS

Fireplace and Paneling, Second Floor Family Living Room
JEREMIAH LEE MANSION—1768—BANK SQUARE, MARBLEHEAD, MASSACHUSETTS


Measured June 25 & Drawn July 30 1938 by Frank Chouteau Brown Architect A.I.A. Boston & Marblehead Neck Massachusetts
SKETCH IONIC CAP & CARVED MOULD OF ARCHITRAVE & BACKBAND OF DOOR TRIM
(No Scale)
FIREPLACE SMALL DRESSING ROOM
Cement
BRASS ESCUTCHEON & HANDLE ON PRINCIPAL DOOR
Stone Border
HEARTH
Inch Scale for Details
Foot Scale for Drawing
Sadler Colored Tiles
Stone Jambs & Border to 12x24 Hearth
FAMILY LIVING ROOM FIREPLACE & PANELING SECOND FLOOR ROOM 1768
JEREMIAH LEE MANSION BANK SQUARE MARBLEHEAD MASSACHUSETTS



MANTEL—DRAWING ROOM

MANTEL—DINING ROOM

JEREMIAH LEE MANSION—1768—BANK SQUARE, MARBLEHEAD, MASSACHUSETTS

MANTEL·GUEST·ROOM·LEE·MANSION
1768·MARBLEHEAD·MASSACHUSETTS·
Measured June 25 & Drawn July 9 1938 by Frank Chouteau Brown A.I.A.
HEARTH
20" Wide
Stone Border
8½" Red Brick Tiles
Scale for Elevation
Scale for Details
Sadler Red Transfer Tiles
4'-0¾"
3'-0½"
2'-11½"
1'-9"
MANTEL·DRAWING·ROOM·LEE·MANSION
1768·MARBLEHEAD·MASSACHUSETTS·
Measured on June 25 & Drawn July 9 1938 by F.C. Brown
MANTEL SHELF
ROOM CORNICE
White Marble Facing & Hearth
Marble
Scale for Elevation
Scale for Details
3'-9"
3'-0"
2'-9¼"

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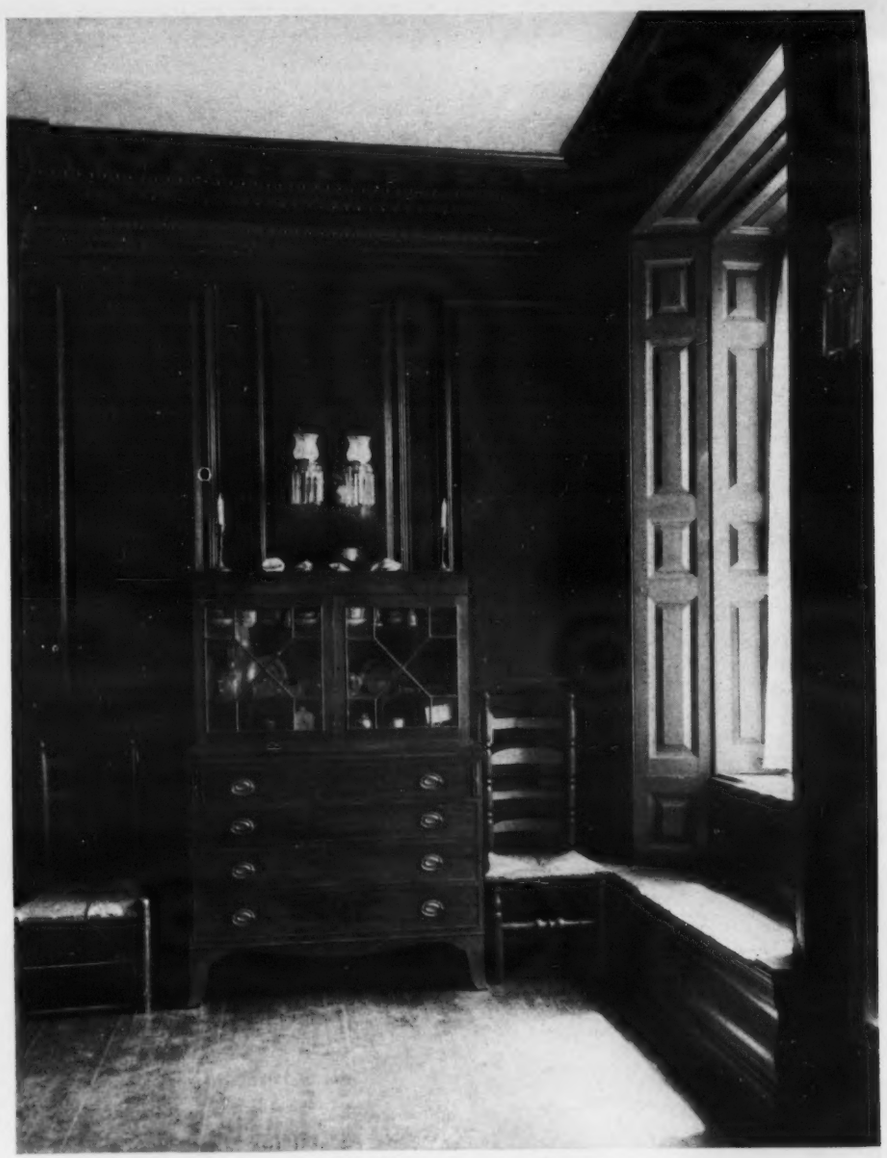
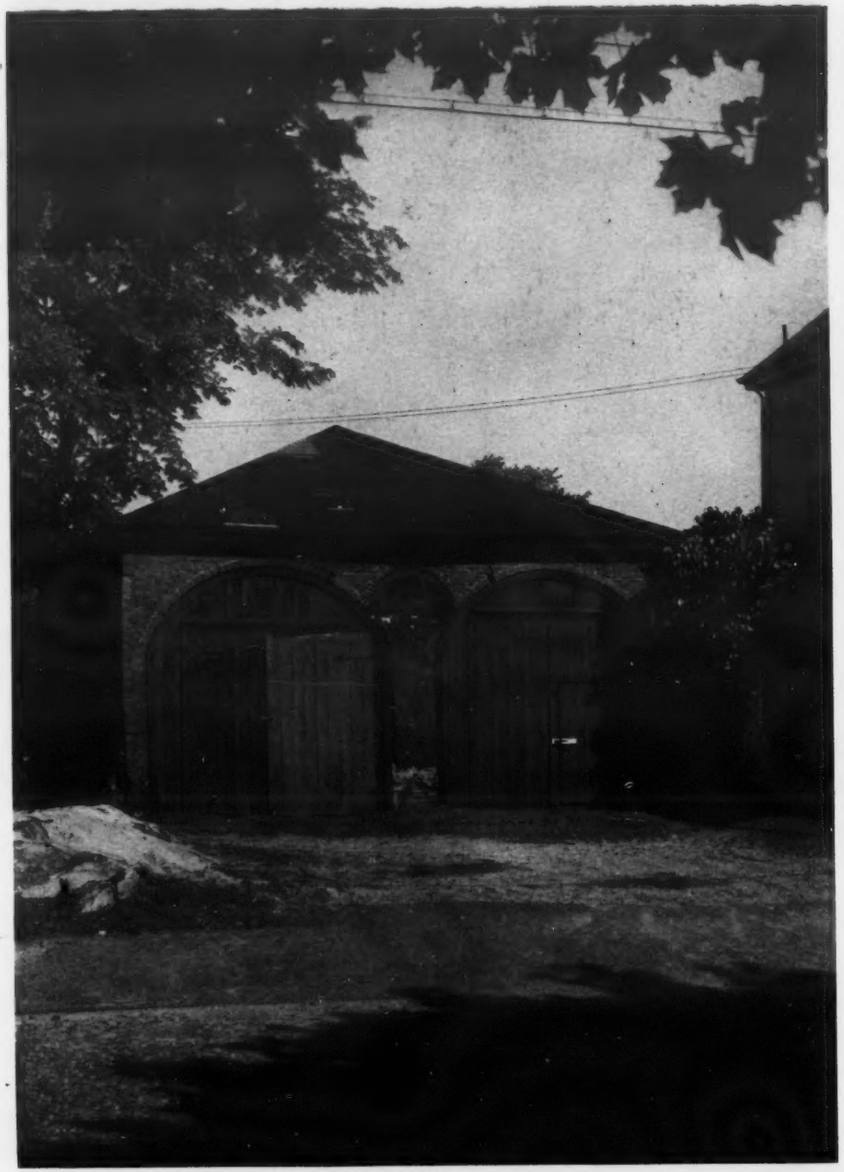
·1768·MARBLEHEAD·MASSACHUSETTS·

THE KITCHEN

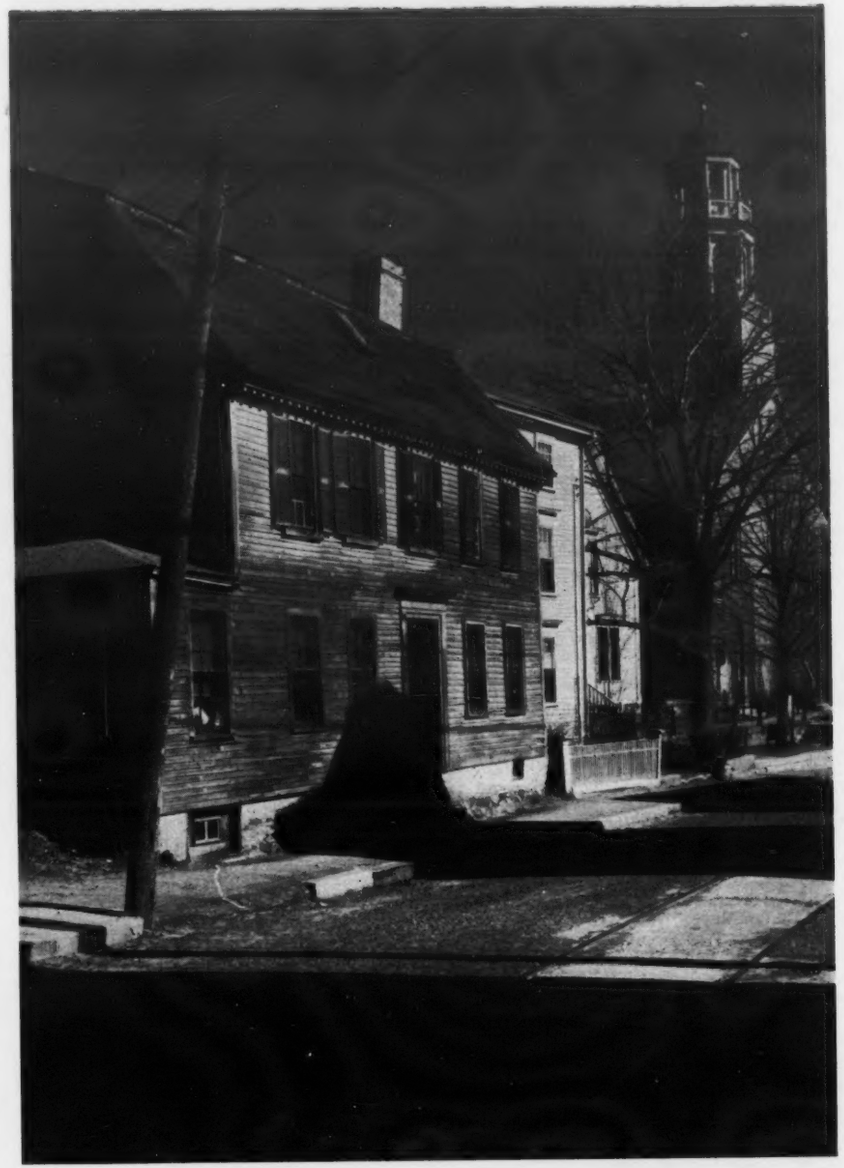


CORNER OF BANQUET ROOM

JEREMIAH LEE MANSION—1768—BANK SQUARE, MARBLEHEAD, MASSACHUSETTS



"The Gun House"



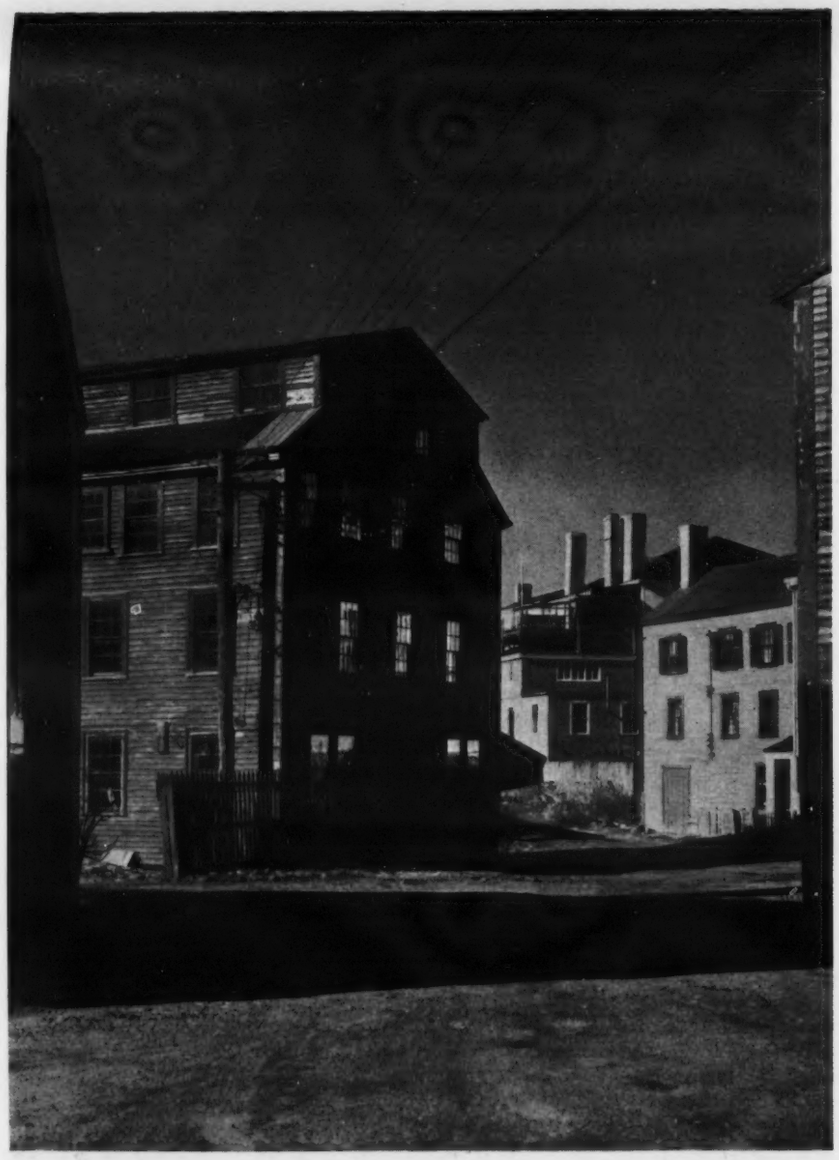
Lower Washington Street, Looking North

GLIMPSES OF OLD BUILDINGS WHICH ABOUND IN MARBLEHEAD, MASSACHUSETTS

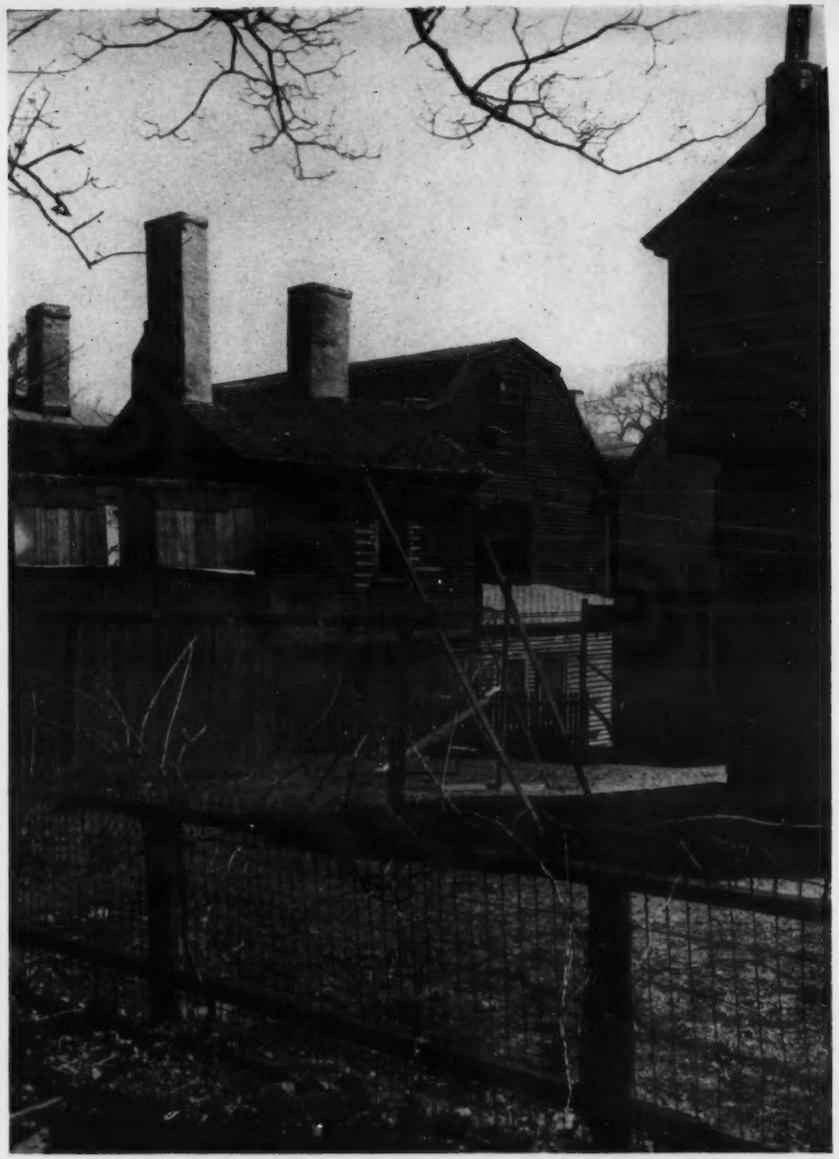
The Gun House

Lower Washington Street, Looking North

GLIMPSES OF OLD BUILDINGS WHICH ABOUND IN MARBLEHEAD, MASSACHUSETTS



Head of Front Street



Across the Back Yards off Pearl Street

TWO OF THE MANY PICTURESQUE GROUPINGS OF BUILDINGS IN MARBLEHEAD, MASSACHUSETTS

jointing of a masonry wall, was not an uncommon treatment for important dwellings in towns along the coast. In some cases it was employed upon the front alone. In other instances it was used upon the front and two ends; and sometimes—although more rarely—on all four sides of the structure. In Marblehead, both the Lee houses—as well as the "King" Hooper house—have shown this use of wood as an outer wall covering. So, too, did the "Lindens," formerly in Danvers; and it is also occasionally found on dwellings in Salem, Hingham, Newburyport, Portsmouth, Portland, Providence, and other cities and towns in New England. It is an even more common treatment to find wooden "quoins" used on the corners of old Colonial wooden buildings in place of the simpler upright corner board.

Another feature employed in common by the two Lee Houses, is the "Cupola" on the center of the roof ridge,—that, in the more dignified and formally designed coast dwelling, sometimes supplants the simpler "Captain's walk," that was built over the roofs of many old houses along the coast, at the old harbors of the mainland and, especially, in great numbers, in such a sea faring island port as Nantucket. Their chief reason for being was to give the occupants of these houses easy access to the roof to overlook and keep track of the shipping in the harbor and the boats that entered and left its anchorage on their many voyages from the port.

Both Jeremiah Lee and Col. Azor Orne were elected to the Continental Congress, as well as being members of the province "Committee of Safety and Supplies," and the two, along with their fellow-townsman, Elbridge Gerry (afterwards vice-president of the United States), were very nearly surprised at Cambridge by the British soldiers, on the night of April 18, 1775, when they had remained in the Black Horse Tavern after a later meeting of the province committee, escaping at the very last moment, with only a few clothes,—of the result of which exposure Mr. Lee died just three weeks later.

The Azor Orne house is another Marblehead example of the three story town house—although, rather unusually, with gable ends; and a late doorway—of which, however, the rear view shown here is more locally characteristic; indicating, as it does, the way the houses in that town are sometimes located against the base of the rocky bluffs that often crowd upon and overlook their narrow backyards. This dwelling is situated on the street of the same name, off the turn at the end of Washington Street into Franklin, facing out toward the harbor. The home of Parson Barnard is on Franklin Street, just around the corner; a large gambrel roof dwelling, enshrouded in fine old trees, of nice proportions, but with little authentic detail remaining from its many changes and repairs.

Inside its later Greek doorway, the Orne house has a fine stairway of the period of about 1770, with fireplaces and cornices quite similar to those of the simpler types to be found in the Lee Mansion; along with the rooms with simple paneled end, of which two examples are shown herewith.

But, after all, the distinctive charm of Marblehead does not reside in its more pretentious dwellings, handsome and much visited as they are; but rather in the more informal and picturesque groupings of old weatherworn sided structures, placed at all possible angles to the street, and to their neighbors, in which certain sections of the old town still abound. While, to a lesser extent, at Newcastle and upon some portions of the "old River Road" along the Merrimac in Amesbury, and at one or two sections of Portsmouth, and a few bits around the harbor at Gloucester, a few similar glimpses may now be seen—and, to an even greater extent, they will probably continue and be preserved on the island at Nantucket—certainly nowhere else so near to Boston may so much of the charm of an old informally developed fishing port still be seen by the hurried visitor.

Repairs and rebuildings by natives and summer visitors; repainting, clapboarding, and new wall-shinglings by the stiff-necked "Headers"; with clumsy-carpentered replacements, entirely lacking the old character that has made this town so attractive to visitors in the past, still goes doggedly on, year after year,—until now there remain only a few of the many picturesque groupings that formerly abounded on every side. Such glimpses as of the North Church tower from Back St. (page 141, Vol. XXIV, No. 3); the bit on Lower Washington St. (page 158); or the view nearly behind that place, across the back yards off Pearl St. (page 159); the bit to be seen on the S-shaped zig-zag down the hill from Lee St. onto Front (page 159)—although now much less interesting than before the old fish-warehouse was "slicked up" a few years ago!—or, finally, and most characteristically, the old lobsterman's shack surrounded by lobster pots and dories, down near the "Little Harbor" beach, are fast disappearing, along with other well-remembered vistas—such as the old "Spite House" before it was painted a few years ago. They now linger in the memories of a few older inhabitants, a fewer number of old visitors,—and where they have been recorded for posterity, as vanishing records from the nation's picturesque and "functional" past, as upon these pages—and others in this series—will continue to show!